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December 4, 2003

Ms. Blanca S. Bayo, Director  
Division of the Commission Clerk  
and Administrative Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

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Re: Docket Nos. 030851-TP and 030852-TP  
Implementation of requirements arising from Federal Communications Commission's  
triennial UNE Review: Local Circuit Switching for Mass Market Customers

Dear Ms. Bayo:

Please find enclosed for filing an original and 15 copies of the Direct Testimony and Exhibits of Verizon Florida Inc. in the above matter. Service has been made as indicated on the Certificate of Service. If there are any questions regarding this matter, please contact me at 202-663-6380.

Sincerely,

Catherine Kane Ronis

Enclosures

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**BEFORE THE  
PUBLIC SERVICE COMMISSION OF FLORIDA**

**Direct Panel Testimony  
(Hot Cut Process and Scalability)**

Members of the Panel:

Carleen A. Gray  
Maryellen T. Langstine  
Thomas Maguire  
James L. McLaughlin  
Michael A. Nawrocki  
Larry G. Richter

Submitted On Behalf Of  
Verizon Florida Inc.

DOCKET NOS. 030851-TP & 030852-TP

**December 4, 2003**

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**I. INTRODUCTION**

**A. Purpose And Scope Of The Testimony**

**Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?**

A. This testimony is submitted on behalf of Verizon Florida (“Verizon”) in response to the FCC’s Triennial Review Proceeding. In its *Triennial Review Order*,<sup>1</sup> the FCC found that, in some markets, the current hot cut process, used to transfer loops from incumbent switches to CLEC switches, can pose operational and economic barriers to CLECs deploying their own switches. *Triennial Review Order* ¶ 465. The FCC determined that the hot cut process could be improved if cutovers were offered on a bulk basis. *Id.* ¶ 474. Accordingly, as a precursor to the elimination of UNE-P in particular markets, the FCC directed state commissions to either approve and implement a batch cut process or issue detailed findings that the current hot cut processes do not give rise to impairment in a market, making a batch cut process unnecessary. *Id.* ¶ 490. The FCC directed states to decide the appropriate volume of loops to be included in the batch and to approve the specific process to be employed in performing batch cuts. As the FCC noted, “the process adopted will necessarily vary based on the relevant incumbent’s particular design and cut over practices.” *Id.* ¶ 489.

Accordingly, this testimony addresses four principal issues:

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<sup>1</sup> Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *In the Matter of Review of Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability*, FCC 03-36, CC Docket Nos. 01-338, 96-98, 98-147 (rel. Aug. 21, 2003) (“*Triennial Review Order*”).

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- The nature of the hot cut processes that Verizon will soon offer — a “basic” process and a Project, or Large Job, process, both utilizing the Wholesale Provisioning and Tracking System (“WPTS”).
- A new “batch” hot cut process that Verizon proposes to offer in response to concerns raised in the FCC’s *Triennial Review Order*.
- The TELRIC cost of providing “basic,” “Large Job,” and “batch” hot cuts and proposed rates for these processes.
- The “scalability” of Verizon’s hot cut processes — *i.e.*, Verizon’s ability to handle the level of hot cut activity expected if unbundled local switching (and therefore the combination of unbundled network elements known as the UNE Platform, or “UNE-P”) were eliminated as a competitive provisioning alternative.

**B. The Witnesses**

**Q. WHO IS SPONSORING THIS TESTIMONY?**

A. This testimony is offered by a witness panel consisting of (in alphabetical order):

- Carleen A. Gray
- Maryellen T. Langstine
- Thomas Maguire
- James L. McLaughlin
- Michael A. Nawrocki
- Larry G. Richter

The background and qualifications of each of these witnesses are set forth in Exhibit I-A to this testimony.

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While all members of the Panel have reviewed and agree with this testimony in its entirety, each Panel member assumed primary responsibility for specific segments of the testimony. Each Panel member relies on the facts and analyses developed by the other Panel members in their areas of primary responsibility.

**C. Organization Of The Testimony**

**Q. PLEASE DESCRIBE THE ORGANIZATION OF THIS TESTIMONY.**

A. The testimony is divided into four parts (of which this is the first), each addressing a separate subject area. The parts, and the witnesses principally responsible for the discussions in each part, are as follows:

- PART I (Introduction): This section is submitted on behalf of the entire Panel.
- PART II (Hot cut processes): Messrs. Maguire and Nawrocki, along with Ms. Langstine and Ms. Gray are principally responsible for this section of the testimony. Mr. Maguire provides expertise on operational issues, Mr. Nawrocki addresses technical and engineering issues, Ms. Langstine provides expertise on Operations Support Systems ("OSS"), and Ms. Gray is responsible for product management issues.
- PART III (Hot cut costs and rates): Mr. Richter and Ms. Gray are principally responsible for this section of the testimony. Mr. Richter addresses cost issues and Ms. Gray addresses rate structure and rate application issues.

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- PART IV (Hot cut scalability): Messrs. McLaughlin and Maguire, along with Ms. Langstine, are principally responsible for this section of the testimony.

Each part is accompanied by one or more exhibits, each of which is numbered to indicate the specific Part of the testimony to which it relates, and the exhibit sequence within that Part. Thus, Exhibit I-A is the first exhibit to this Part I of the testimony; and Exhibit II-B is the second exhibit to Part II. These exhibits include worksheets, tabulations of backup data, relevant diagrams and flowcharts, and the electronic spreadsheet models used in preparing particular portions of the testimony.

For convenience, we provide in Exhibit I-B a complete list of Exhibits, and, in Exhibit I-C, definitions of certain acronyms used throughout this testimony.

**D. Overview Of The Testimony**

**Q. PLEASE SUMMARIZE THE CONCLUSIONS THAT VERIZON REACHES IN THIS TESTIMONY.**

A. Verizon's principal conclusions are as follows:

- The hot cut processes that Verizon currently offers or will shortly begin offering in Florida provide CLECs with a range of effective and efficient options that utilize current technology and comply with Verizon's obligations under this Commission's orders and under the FCC's *Triennial Review Order*. These include a "batch" hot cut process that complies with the requirements of FCC Rule 319(d)(2)(ii).



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- Verizon's cost studies demonstrate the efficiencies associated with the use of forward-looking systems such as the Wholesale Provisioning Tracking System ("WPTS"). These efficiencies are reflected in Verizon's batch cut costs and proposed rates.
- Verizon's current hot cut processes as well as the new batch cut process are "scalable," in that they can handle the volume of hot cuts predicted for a post-UNE-P environment.

**II. HOT CUT PROCESSES**

**A. Purpose Of Testimony**

**Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON'S TESTIMONY?**

- A. The purpose of this Part of the testimony is to describe the processes that Verizon currently uses for performing hot cuts, as well as an additional "batch" hot-cut process that it will be introducing in the near future.

**B. Background**

**1. Definition of a "Hot Cut"**

**Q. WHAT IS A HOT CUT?**

- A. Although there may be unique hot cut processes utilized by the different incumbent local exchange carriers ("ILEC"), the term "hot cut" is used in the local exchange industry as a generic term to describe the near-simultaneous disconnection of a Verizon working loop from a port on one carrier's switch, and the reconnection of that loop to a port on a different carrier's switch, without any

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significant out-of-service period.<sup>2</sup> Initially, the loop may be any of: (a) a Verizon retail loop, (b) a loop being used to provide resold service, (c) a part of a UNE-P arrangement, or (d) a UNE-L connected, through a CLEC collocation arrangement, to a CLEC switch, and being used by that CLEC to provide local exchange service to one of its customers. After the cutover, the loop would generally be a UNE-L connected through to a different CLEC switch.

A simplified diagram of the basic physical connections and disconnections involved in a typical hot cut is provided in Exhibit II-A.

**Q. HOW DO VERIZON'S COORDINATED HOT CUT PROCESSES AVOID ANY SIGNIFICANT OUT-OF-SERVICE PERIOD FOR THE CUSTOMER BEING CUT OVER?**

A. Continuity of service is maintained through the continuous exchange of information concerning the status of the migration between the CLEC that will provide service after the cutover, Verizon's Regional CLEC Coordination Center ("RCCC"), and Verizon's frame technicians.

In addition to this exchange of information, most of the necessary connections are pre-wired in order to reduce the time required for the actual cutover and thus to minimize the duration of any out-of-service condition. (The connections that

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<sup>2</sup> Verizon employs two different types of coordinated hot cuts: a "coordinated conversion" and a "hot cut coordinated conversion." The only difference between the two basic processes is that, for a "hot cut coordinated conversion," there is a live, continuous conference call during the entire process, so that the CLEC stays on line with Verizon through out the migration, whereas in the coordinated conversion Verizon contacts the CLEC only before proceeding with the work and again after the work is complete. For purposes of this testimony, we will refer to both "coordinated conversions" and "hot cut coordinated conversion" as "basic" hot cuts. In addition, Verizon offers a non-coordinated migration that will not be discussed in this filing as it is more analogous to the provisioning of a new loop.

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are pre-wired prior to the “due date” of the cut (*i.e.*, prior to the day on which the cut is actually made), and those that are made and broken on the due date itself, are identified in Exhibit II-A.

Finally, on the “due date” of the hot cut, Verizon ensures that the CLEC is ready to move forward with the migration, checks the status of the line at the time of the cutover in order to ensure that no call is in progress, and immediately notifies the CLEC when the wires have been moved.

**Q. WHY IS THIS COORDINATION BETWEEN VERIZON AND THE CLEC NECESSARY?**

- A. Coordination is necessary for two reasons. First, some form of coordination is necessary to ensure that dial tone is available on the new provider’s switch port at the time of the cutover. This ensures continuity of the customer’s ability to make outgoing calls.
- Second, coordination is necessary to ensure that the customer’s number is ported immediately after the Verizon frame technician completes the cut. This ensures continuity of the customer’s ability to receive incoming calls. See *Triennial Review Order* ¶ 465 n.1409. Although there are various steps involved in local number porting, the key step is notification of the Number Portability Administration Center (“NPAC”) that the physical transfer of the customer to the new provider’s switch has been completed and that the number can therefore be ported. This final notification cannot be made before the cutover — because that would prevent the customer from receiving incoming calls before the cutover — but it must be made as soon as possible after the cutover. Under current

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coordinated conversion procedures, this notification is submitted by the new local service provider.

**Q. IN DEFINING HOT CUTS, YOU INDICATED THAT THE FINAL STATE OF THE CUT-OVER LOOP WOULD GENERALLY BE AS A UNE-L ARRANGEMENT CONNECTED THROUGH TO A CLEC SWITCH. WHY DID YOU EXCLUDE CASES IN WHICH THE CUSTOMER IS BEING TRANSFERRED FROM A CLEC TO VERIZON'S RETAIL SERVICE?**

A. Although the process used for such "winbacks" is similar in many ways to the standard Verizon-to-CLEC hot cut process, it also differs from it in one very significant respect. Specifically, in a winback cutover, little or no coordination is required between Verizon and the CLEC. As discussed above, coordination is required in a standard hot cut in order to ensure that dial tone is available from the customer's new carrier, and that the customer's number is ported, at the time the loop is cut over. In a winback scenario, however, the new dial tone is being provided by Verizon, and it is Verizon that submits the final authorization to port the customer's number. It is also Verizon, of course, that performs the physical wiring work that completes the hot cut. Thus, winbacks primarily require coordination *within* Verizon rather than coordination between Verizon and a CLEC.

Winbacks differ from standard Verizon-to-CLEC hot cuts in another way as well. For example, Verizon is not always able to obtain from the CLEC that is losing the customer the circuit identification information necessary for a successful

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cutover. In such cases, Verizon has no choice but to provision the customer's service on a separate line.

For purposes of this testimony, we will refer to a cutover that occurs as part of a winback as a "reverse" hot cut.

**Q. ARE REVERSE HOT CUTS ADDRESSED IN THIS TESTIMONY?**

A. Only to a limited extent. Since a winback is in most respects a retail service, rather than a service provided to a CLEC, the manner in which that service is provided is not part of this proceeding and thus is not addressed in this testimony. However, reverse hot cuts are appropriately taken into account in Verizon's scalability analysis, since they are part of the additional work load that would result from the elimination of UNE-P, and would use some of the same resources as standard hot cuts.

**2. Hot Cuts of IDLC-Equipped Loops**

**Q. WHAT IS INTEGRATED DIGITAL LOOP CARRIER ("IDLC") TECHNOLOGY?**

A. IDLC is a loop provisioning technology. In IDLC-equipped loops, the electrical signal generated by the end user's customer premises equipment is converted into a channelized, digital, DS0 format at a Remote Terminal ("RT"). The DS0 channels are then multiplexed, in groups of 24, into DS1 signals, and are transported to the central office over a fiber feeder or other high-speed digital feeder facility. At the central office, the feeder facility is terminated and IDLC traffic is routed as DS1-level signals directly to the digital line ports on the switch. Since in IDLC technology voice traffic is delivered to the central office and into

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the switch as a multiplexed, DS1-level signal, there is no direct appearance of individual analog voice grade loops in the central office.

**Q. WHAT IS THE RELEVANCE OF IDLC TECHNOLOGY TO HOT CUTS?**

A. Although IDLC is a well-accepted and efficient means to deliver voice traffic over a digital loop carrier system to a digital switch, there is no technically feasible, practicable means of obtaining access to individual voice-grade loops at the central office when such loops are provisioned over an IDLC system.

Accordingly, before a customer served by an IDLC-equipped loop can be cut over to a switch-based CLEC, the customer must be shifted from an IDLC-equipped loop to an all-copper loop or to a loop served via Universal Digital Loop Carrier ("UDLC") technology (which, unlike IDLC, can be unbundled in the central office).

**Q. HOW IS THIS CHANGE IN FACILITIES ACCOMPLISHED?**

A. In the case of IDLC-equipped loops, a field operations technician must be dispatched to the Serving Area Interface ("SAI") associated with the copper distribution pair that serves the customer. (Because the SAI is part of the outside loop plant, such dispatches are referred to as "outside" dispatches.) The distribution pair for an IDLC-equipped loop is cross-connected at the SAI to a copper "sub-feeder" pair that is in turn connected to IDLC electronics at the RT. In order to permit a hot cut to be made, the distribution pair must be moved at the SAI so that it will be cross-connected either to a pair in a copper feeder system, or to a sub-feeder pair associated with a UDLC system in the RT. This is illustrated in Exhibit II-B-1.

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If spare copper or UDLC facilities are not available at the SAI, then a “line and station transfer” (“LST”; also known as a “pair swap”) may be required. In an LST, the technician moves *another* Verizon retail customer from copper or UDLC facilities to IDLC equipment. The customer for whom the hot cut was requested can then be moved to the freed-up copper or UDLC facilities. This is illustrated in Exhibit II-B-2. Indeed, in some cases, even more complex rearrangements of the outside plant will be required in order to free up copper or UDLC facilities.

Generally, all necessary connections at the central office are pre-wired before the customer’s service is cut over in the field on the due date.

**Q. HOW DOES THIS AFFECT THE HOT CUT PROCESS?**

A. The outside dispatch that is required must be coordinated with the other activities involved in the cut to ensure that the cut can be made on the due date. For example, a hot cut for an IDLC-equipped loop will be scheduled for a morning or afternoon appointment, rather than for a specific time, because of variability in the travel conditions and other factors that may affect the time required for the outside technician to reach the SAI.

**3. Organizations Involved in Implementing Hot Cuts**

**Q. PLEASE IDENTIFY THE VERIZON ORGANIZATIONS INVOLVED IN PERFORMING A HOT CUT.**

A. The principal operations and personnel at Verizon that are involved in implementing a hot cut and performing hot-cut related activities for all Verizon hot cut processes discussed below are:

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- The National Market Center (“NMC”), which is responsible for processing Local Service Requests (“LSRs”) that are submitted by the CLECs.
- The RCCC, which “project manages” the hot cut process and ensures proper coordination between Verizon and the CLEC.
- The Assignment Provisioning Center (the “APC”), which handles facility assignment issues related to the migration request, such as ensuring that an alternative facility (copper or UDLC) is available if necessary.
- The frame technicians at the Central Office where the cut is performed.
- Field technicians (where outside dispatches are required).
- The Recent Change Memory Administration Center (“RCMAC”), which is responsible for removing the translations from Verizon’s switch once a Verizon-to-CLEC cutover is complete (thus terminating the provision of Verizon dial tone to the customer).
- The Local Number Portability Center (“LNPC”), which handles Verizon activities related to the porting of the customer’s number.

**4. Verizon’s Hot Cut Processes Satisfy the Forward-Looking Technology Standard**

**Q. DOES VERIZON UTILIZE THE MOST EFFICIENT TECHNOLOGY CURRENTLY AVAILABLE FOR PERFORMING HOT CUTS?**

A. Yes, each of the hot cut processes employed by Verizon utilizes the most efficient technology that is currently available.

**Q. PLEASE EXPLAIN THE BASIS FOR THAT CONCLUSION.**



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A. Any consideration of hot cuts must begin with the understanding that they require physical disconnection and connection of wires, and that wiring is inherently a manual process. Contrary to the assertions that CLECs have made in numerous forums, Verizon is aware of no viable, technically feasible, practical option for automating the wiring function out of existence. *See Triennial Review Order* ¶ 465 n. 1409 (referring to a hot cut as a “largely manual process requiring incumbent LEC technicians to manually disconnect the customer’s loop, which was hardwired to the incumbent LEC switch, and physically re-wire it to the competitive LEC switch . . .”).

**Q. SOME CLECS HAVE SUGGESTED THAT THE WIRING PROCESS IN THE CENTRAL OFFICE COULD BE COMPLETELY AUTOMATED BY SYSTEMS THAT USE ROBOTIC TECHNOLOGY TO MAKE AND BREAK CONNECTIONS AT THE FRAME. PLEASE COMMENT ON THIS CLAIM.**

A. Devices do exist that automatically make copper-to-copper physical connections between any of a set of input positions and any of a set of output positions. For the most part, Verizon utilizes these devices in small, unstaffed central offices that serve an average of a few thousand lines (and in which, incidentally, there is minimal if any collocation). (Examples are central offices in such towns as Ariperra, Casper, Gulfside, Lake Deeson and Willow Oak.) By enabling Verizon to make cross-connections automatically and remotely, such devices reduce the need for frame technicians to travel to those offices.

However, such devices cannot be efficiently scaled up to serve larger central offices. Indeed, the largest cross-connect matrix of which we are aware can

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make connections between a set of about 5,000 input and output pairs — far smaller than the number of pairs served by even a moderately-sized central office. In order to manage central offices of larger than 5,000 lines, the only solution at present is to divide a Main Distributing Frame (“MDF”) into “zones” roughly the size of the cross-connect system. Obviously, for true “any-to-any” connectivity to be available in such an arrangement, extensive cross-connections would be necessary *between* the individual “zones.” For larger central offices, the number of zones necessarily increases, as does the number of positions on the cross-connect device that would have to be devoted to inter-zone connections. In Verizon’s judgment, this need for partitioning, and for cross-connections between the partitioned zones, would render such devices unusable for large-scale central offices. The only theoretical alternative to this sort of daisy-chaining would be to segment the wire center so that certain lines could be connected only to certain ports or POT bay appearances, and this would not be a viable option for CLECs that want the ability to access *any* feeder pair served by the central offices in which they collocate.

Moreover, although automated cross-connect devices are capable of connecting and disconnecting circuits automatically, manual wiring would still be required, where such devices are used, to establish connectivity from the MDF through the automated system to the loops served by the central office. There are two choices for establishing this connectivity. First, the necessary connections could be established on an as-needed basis. In that scenario, however, the need for a manual connection in order to implement a CLEC interconnection request would

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not be eliminated. (MCI has acknowledged that such a strategy would not make any sense.) Second, the loops served by the central office could all be pre-wired to the automated system and the automated system could be pre-wired to the MDF. Thus, in addition to the vendor cost of an automated system sufficiently large to be connected to all of the loops in a central office, Verizon would also incur substantial costs in pre-wiring the necessary connections. Those costs, of course, would appropriately be borne by the cost causers — *i.e.*, the requesting CLECs. Even then, though, Verizon may fail to recover the capital costs associated with pre-wiring if CLECs can avoid using the service or services whose rates are set to recover those costs.

For these reasons, automated cross-connect devices are neither feasible nor cost-effective for use in the larger central offices that support virtually all of the collocation and hot cut activity in Verizon's network. Verizon, of course, closely monitors new product offerings from its vendors, and when any promising new device appears, evaluates it for its ability to reduce costs and improve performance. As yet, no automated cross-connect device has appeared that can efficiently eliminate the need for manual work in cross-connecting a UNE loop to a CLEC's POT bay in a large central office.

**Q. CLECS HAVE ALSO SUGGESTED THAT THROUGH APPROPRIATE USE OF GR-303 TECHNOLOGY, VERIZON COULD IMPLEMENT "ELECTRONIC LOOP PROVISIONING," THROUGH WHICH LINES COULD BE CUT OVER BETWEEN SWITCH PROVIDERS ON A SOFTWARE BASIS, WITHOUT**

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**REQUIRING ANY PHYSICAL CONNECTION OR DISCONNECTION WORK.**  
**PLEASE COMMENT ON THIS CLAIM.**

- A. The concept of using GR-303 technology to accomplish Electronic Loop Provisioning is flawed from both a technical and a practical implementation standpoint.
- First, GR-303 technology does not support multi-carrier applications such as the cutover of loops between switch providers. While GR-303 vendor products do support the existence of multiple interface groups between the remote terminal and the digital switch, they do not support control of, and access to, the GR-303-compliant RT electronics by more than one carrier. GR-303 technology requires a high degree of sophisticated real-time coordination between the digital switch, the RT electronics, and the associated OSS. Thus, multi-carrier access to a GR-303 system would require partitioning of control, security, provisioning, and testing functions, as well as other measures that would prevent carriers from inadvertently or intentionally interfering with each others' services. At this time, Verizon is not aware of any vendor solution — much less one supported by industry-wide standards bodies — that would address these issues.
- Second, even if these issues were somehow solved, it is unlikely that CLECs would be willing to underwrite the cost of pre-provisioning multiple DS1 connections to every next generation digital loop carrier system in the office, which is what would be required — at a minimum — to enable electronic provisioning of GR-303 loops.

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**Q. HAVE OTHER ELECTRONIC LOOP PROVISIONING ALTERNATIVES BEEN PROPOSED?**

A. Yes. A number of proposals, differing in various technical details, have been floated in various regulatory proceedings. We are not aware of any that provide a feasible, practical, cost-effective means of eliminating the need for hot cuts in Verizon's network. For example, a form of Electronic Loop Provisioning that had been proposed by AT&T was considered by the FCC in its *Triennial Review* proceeding. The FCC concluded that the feasibility of the proposal had not been established. The FCC cited evidence that an effective Electronic Loop Provisioning process would require "a fundamental change in the manner in which local switches are provided" and "dramatic and extensive alterations to the overall architecture of every incumbent LEC local telephone network," at a cost estimated at more than \$100 billion. The FCC accordingly rejected the proposal, stating that "the record in this proceeding does not support a determination that electronic provisioning is currently feasible." *Triennial Review Order* ¶ 491 & n. 1517.

**Q. IN WHAT SPECIFIC RESPECTS ARE VERIZON'S HOT CUT PROVISIONING PROCESSES EFFICIENT, TECHNOLOGICALLY UP-TO-DATE, AND FORWARD-LOOKING?**

A. First of all, the *ordering* of a hot cut makes use of Verizon's electronic ordering interfaces and up-to-date, highly efficient OSS. In addition to providing a means of transmitting the LSR from the CLEC, Verizon's OSS move a sizable portion of properly completed LSRs through the service order generation process and, in

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turn, move these orders through the assignment process and into the RCCC, thus obviating the need for manual order processing in the NMC and manual assignment by the APC.

In addition, Verizon is in the process of implementing the Wholesale Provisioning Tracking System ("WPTS") in its West territory — a web-based system that has enjoyed great success in the East region.

**Q. WHAT IS WPTS?**

A. WPTS is a system that was created by Verizon to assist the CLEC community, the RCCC, and Verizon's frame organization in the coordination functions associated with hot cuts. It automatically retrieves information on hot cut orders from Verizon's OSS, and serves as a "clearinghouse" for a wide range of data on the progress of those orders. At appropriate points, it automatically forwards work for review and verification to the CLEC and to Verizon's RCCC. It provides a secure web site on which a CLEC (and authorized Verizon personnel) can view (and download) status information. It also provides a platform for the delivery of messages between Verizon and the CLEC, in most cases eliminating the need for telephone calls. The system thus helps to ensure that all key steps of the hot cut process are properly completed and that all necessary communications between the CLEC and Verizon work teams occur effectively and at minimum cost.

**Q. IS WPTS UTILIZED BY OTHER INCUMBENT LECS?**

A. No. WPTS was developed by Verizon as an enhancement to its hot cut process, and it is unique to Verizon. Other ILECs have expressed interest in the system.

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**Q. ARE THERE ANY OTHER BENEFITS TO WPTS?**

A. Yes. Aside from its role in facilitating the exchange of information between Verizon and the CLEC, WPTS also allows frame technicians to communicate electronically with the RCCC (and directly with the CLEC) about CLEC dial tone issues, the CLEC's willingness to proceed with the cut (the "go-ahead"), and the completion of wiring work. As a further enhancement to WPTS, Verizon is currently using handheld devices on a trial basis; those devices provide frame technicians with more rapid and convenient access to WPTS and other systems.

**5. Specific Hot Cut Processes Utilized By Verizon**

**Q. WHAT SPECIFIC HOT CUT PROCESSES ARE OFFERED BY VERIZON?**

A. Verizon currently uses two separate, though closely related, hot cut processes: a "Basic" and a "Project" or "Large Job" process. In addition to these proven processes, Verizon has developed a new process that we refer to as a "Batch" hot cut process. These three processes are described in greater detail below. It should be noted that no additional special hot cut processes exist, or are required, for different types of migrations (Verizon-to-CLEC v. CLEC-to-CLEC; Verizon retail (or resale)-to-UNE-L v. UNE-P to UNE-L), for different types of end users (*e.g.*, residential v. business), or for orders submitted in different ways (*e.g.*, via Wholesale Internet Service Engine, or "WISE" or via Electronic Data Interface, or "EDI"). Simply put, a hot cut is a hot cut.

**Q. CAN VERIZON PERFORM CLEC-TO-CLEC HOT CUTS WITH ITS BASIC HOT CUT PROCESS?**

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A. Yes. The only problem such cuts raise is the practical one referred to above in connection with winbacks — in some cases, necessary circuit ID information is not available to Verizon.

**C. The Basic Hot Cut Process**

**Q. WHAT IS VERIZON'S "BASIC" HOT CUT PROCESS?**

A. Although this process is also sometimes described as the "individual" hot cut process, that is something of a misnomer, since the process is not limited to orders for one loop or even a small number of loops. Rather, it is Verizon's default, generally applicable hot cut process.

Although, as described below, Verizon has a separate "Project" process, that process only applies if the CLEC is willing and able to group orders by central office or collocation arrangement, and chooses to submit the orders in that manner. In the normal course of business, however, even in periods of high volume, orders are generally handled through the basic process.

**Q. PLEASE DESCRIBE THE BASIC PROCESS.**

A. A flowchart describing the process is provided as Exhibit II-C-1.

**Q. PLEASE DESCRIBE THE INITIAL PROCESSING OF ORDERS IN THE BASIC PROCESS.**

A. The process itself is relatively straightforward. The CLEC submits a LSR via WISE or EDI to Verizon, indicating that it wishes to use the existing loop to serve the customer. A properly completed LSR will generate three related Verizon service orders:



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- A disconnect or “out” (“O”) order, for example, to discontinue the existing retail service where the customer was originally a Verizon retail customer.
- An install (“I”) order to establish the UNE-L for the CLEC and send a message to NPAC before the due date indicating that the end user’s telephone number will be ported to the CLEC.
- A record order, if requested, to establish listing information.

The LSR will either electronically flow through Verizon’s ordering systems, be routed to the NMC for manual processing (assuming that there are issues that can be addressed by the NMC representative), or be rejected back to the CLEC for additional work.

**Q. PLEASE DESCRIBE THE ROLE PLAYED BY THE RCCC AND THE RCMAC IN THE PROCESSING OF A HOT CUT ORDER.**

A. The RCCC takes the “I” and “O” orders referred to above, and makes sure that they are processed to completion. The “I” order generates the physical hot cut wiring activity. The “O” order flows automatically for RCMAC processing after the hot cut is complete.

**Q. PLEASE DESCRIBE THE ROLE PLAYED BY THE APC.**

A. The APC handles facility assignment issues for the “I” and “O” orders. For example, the APC addresses orders that fall out of the assignment process because of facilities problems. In the case of loops using IDLC technology, the APC must find and assign alternative copper or UDLC facilities, for the reasons discussed above.

**Q. PLEASE DESCRIBE THE PRE-WIRING PROCESS.**

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A. Prior to the due date for the hot cut, the frame technician generally runs a jumper or cross connect wire from the appearance of the CLEC's collocation facility assignment on Verizon's frame, to the appearance of the end user's loop on the MDF. At this time the technician will determine that the CLEC dial tone is working and that there are no apparent problems with the loop. The technician will also use the Automatic Number identification (ANI) or Automatic Number Announcement (ANAC) tool to ensure that they are working on the correct TN coming from the CLEC's collocation appearance and the Verizon switch. If there are any problems, the frame technician will advise the RCCC and, if necessary, the CLEC.

**Q. PLEASE DESCRIBE THE ACTIVITIES THAT OCCUR ON THE DUE DATE.**

A. The CLEC will advise Verizon that it is willing and able to process the cut. Upon receipt of this "go-ahead" confirmation, the frame technician will check once again for the presence of CLEC dial tone. If the end user is using the line, the technician will wait for the line to go idle. Once the lines are properly checked, the technician will lift off the jumper going to the Verizon switch and cut down the wire connected to the CLEC switch, thus completing the process of connecting the loop through to the CLEC switch. Once this cutover is complete, the technician will advise the RCCC and CLEC and complete all required internal processes.

**Q. PLEASE EXPLAIN VERIZON'S "THROWBACK" PROCESS.**

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A. In the event that for some reason the CLEC cannot accept the customer once the wiring work is complete, the CLEC will ask Verizon to put everything back the way it was prior to the hot cut.

**Q. HOW DOES THE PROCESS DESCRIBED ABOVE DIFFER WHEN THE HOT CUT ORDER RELATES TO AN IDLC-EQUIPPED LOOP?**

A. On IDLC cuts, the frame technician will wire the CLEC dial tone to the alternative facility identified by the APC. A field operations technician will be dispatched to the customer's SAI to ensure that the alternate facility (copper or IDLC) is in working order. If it is not in working order, the field technician will search for a suitable alternative. On the due date, a field technician will perform the final cutover in the field at the SAI.

**Q. HOW IS THE PROCESS MODIFIED IF THE CLEC NOTIFIES VERIZON THAT IT IS NOT READY TO PROVIDE DIAL TONE OR IF VERIZON OTHERWISE DETERMINES THAT DIAL TONE IS NOT AVAILABLE AT THE TIME OF THE CUTOVER?**

A. In the event that the CLEC is not in a position to provide dial tone, Verizon will ask the CLEC to submit a supplemental LSR to either cancel the request or push it into a future date. At the same time Verizon will push its disconnect order into the future so as to ensure that the customer does not get erroneously disconnected from the Verizon switch.

**Q. HAS VERIZON'S HOT CUT PROCESS BEEN EVALUATED BY A THIRD PARTY?**

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A. Yes. Verizon's hot cut process has been evaluated in numerous Section 271 cases. In addition, since November 2002, both the basic hot cut process discussed above and the "Large Job" ("Project") process discussed below have been certified by the International Organization for Standardization ("ISO"), a "network of national standards institutes from 147 countries working in partnership with international organizations, governments, and industry, business, and consumer representatives." (<http://www.iso.ch/iso/en/ISOOnline.openerpage>) ISO 9000 is a set of generic management system standards. "Management systems standards," according to ISO, "provide the organization with a model to follow in setting up and operating the management system. This model incorporates the features on which experts in the field have reached a consensus as representing the international state of the art. A management system which follows the model – or 'conforms to the standard' – is built on a firm foundation of state-of-the-art practices." ([www.iso.ch/iso/en/iso9000-14000/basics/general/basics\\_3.html](http://www.iso.ch/iso/en/iso9000-14000/basics/general/basics_3.html)) More particularly, ISO 9000 is a family of "quality management" standards. "[T]he standardized definition of quality refers to all those features of a product (or service) which are required by the customer. 'Quality management' means what the organization does to ensure that its products or services satisfy the customer's quality requirements and comply with any regulations applicable to those products or services." ([www.iso.ch/iso/en/iso9000-14000/basics/general/basics\\_4.html](http://www.iso.ch/iso/en/iso9000-14000/basics/general/basics_4.html)). Verizon is audited every six months in

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order to retain its ISO certification. In fact, in May of this year Verizon attained recertification under the latest ISO standards

**D. The “Large Job” (“Project”) Hot Cut Process**

**1. In General**

**Q. WHAT IS VERIZON’S “LARGE JOB” HOT CUT PROCESS?**

A. In the ordinary course of business, Verizon uses the basic hot cut process, described above, for orders of varying sizes, some of them quite large. However, Verizon does employ a separate process in cases in which CLECs are willing to aggregate their orders by central office and due date, or if Verizon is able to aggregate multiple CO-specific orders on behalf of the CLEC. Verizon refers to this as the Large Job, or Project, Hot Cut Process. (It has sometimes been referred to informally as the “bulk” hot cut process, however we do not use that term in this testimony.)

**Q. PLEASE PROVIDE A BASIC DESCRIPTION OF THE LARGE JOB PROCESS.**

A. The CLEC initiates the Large Job process by contacting Verizon (either its Account Manager or the NMC) to request Project Coordination treatment for a group of orders. The Verizon contact then negotiates a due date with the CLEC and the frame organization. In order to allow for quick identification of the individual orders in the job, the CLEC submits LSRs whose Purchase Order Numbers (“PONs”) all start with the same four characters. All orders in the job that are in a particular central office and have a particular due date will be assigned to a single RCCC coordinator.

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A flow chart describing the steps in the Large Job process is provided in Exhibit II-C-2.

**Q. HOW DOES THE LARGE JOB PROCESS DIFFER FROM THE BASIC HOT CUT PROCESS?**

A. In most respects, including particularly the wiring work required, the two processes are identical. The principal differences lie in the facts that in the Large Job Process: (a) the due date is negotiated rather than being the five business day standard interval; (b) a single PON prefix is assigned to all orders included in the Project, as described above; (c) loops included in a Project are typically cut over after normal business hours.

**Q. WHY ARE DUE DATES FOR LARGE JOBS SET THROUGH NEGOTIATION, RATHER THAN THROUGH THE USE OF A FIXED, STANDARD INTERVAL?**

A. The negotiation process enables Verizon to schedule Large Job work in a way that makes the most efficient use of its force. However, the company is currently evaluating the implementation of an automated scheduling system for Large Jobs, similar to the approach used for some types of field dispatchable UNE orders.

**Q. PLEASE DESCRIBE THE DUE DATE COORDINATION PROCESS FOR LARGE JOBS AND THE MANNER IN WHICH IT DIFFERS FROM THE EQUIVALENT PROCESS FOR BASIC HOT CUTS.**

A. Some CLECs have indicated that they prefer to be notified of the completion of each cut in the Project while others may look for groups of cuts to be completed before they are notified. Notification takes place by telephone.

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**Q. HOW ARE IDLC LINES TREATED IN THE CONTEXT OF LARGE JOBS?**

A. This is another aspect of the Large Job process that will be changed as a result of discussion at the recent New York Hot Cut Workshops. Originally, Verizon did not handle lines that would require an outside dispatch (such as IDLC-equipped lines) as part of a Project, opting instead to handle them as a basic hot cut. This is due to the need to dispatch a field technician to the SAI.

**Q. IN WHAT RESPECTS DOES VERIZON INTEND TO MODIFY THIS POLICY?**

A. During the recent New York Hot Cut Workshops, Verizon proposed to discontinue its policy of requiring CLECs to omit IDLC lines from a Large Job. Instead, we proposed to automatically remove IDLC-equipped lines from Large Jobs, and to convert them to basic hot cut orders, without requiring submission of a supplemental LSR by the CLEC. The CLECs participating in the recent New York Hot Cut Workshops supported this change.

**Q. IN SUCH CASES, WHAT WOULD BE THE DUE DATE FOR THE IDLC ORDER?**

A. Where feasible, Verizon would arrange to make the cut by the due date that had been negotiated for the Large Job Project, even though the loop in question had been removed from the Project.

**Q. HAS THE LARGE JOB PROCESS BEEN ISO CERTIFIED?**

A. Yes, as discussed above, both the basic and large job processes have been ISO certified.

**2. Advantages of the Large Job Process**

**Q. WHAT ARE THE ADVANTAGES OF THE LARGE JOB PROCESS?**

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A. For both Verizon and the CLEC, Large Job processing enables large numbers of lines to be cut over in a way that makes the most efficient use of the parties' work forces. Because of the need for coordination, hot cuts require attention from both Verizon and CLEC personnel on the due date, and on various occasions before the due date. If a large number of orders submitted by a single CLEC can be processed together, on a systematic basis, then both Verizon and CLEC personnel will face a relatively constant amount of work over a predictable period of time. This allows for more efficient force management than would be possible if the same number of cuts were completed on a sporadic and independent basis. This, rather than any reduction in the amount of work required per hot cut, is the principal benefit of the Large Job process.

**Q. GIVEN THE LARGER NUMBER OF LINES INVOLVED, WHY ISN'T THE AMOUNT OF WORK REQUIRED FOR A LARGE JOB HOT CUT SIGNIFICANTLY SMALLER, ON A PER-LINE BASIS, THAN THE AMOUNT REQUIRED FOR A BASIC HOT CUT?**

A. As noted previously, the core of the hot cut process is physical wiring work, and the same amount of wiring is required per line whether orders are processed independently or as part of a Large Job. Other steps also involve similar levels of work for both processes. Moreover, the Large Job process has some steps, such as interval negotiation, that are not utilized in the basic process.

**E. The "Batch" Hot Cut Process**

**Q. WHAT WAS THE REASON FOR THE CREATION OF AN ADDITIONAL "BATCH" HOT CUT PROCESS?**



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A. The process was developed to respond to the issues raised by the FCC concerning hot cuts in the *Triennial Review Order*. The “Batch” cut hot cut optimizes the efficiencies of the Project process regardless of the CLECs’ ability to aggregate orders on a CO-by-CO basis. It also allows to the accumulation of orders for multiple CLECs, whereas Project hot cuts are CLEC-specific. More significantly, it eliminates the need to coordinate since Verizon proposes to manage the entire process from order acceptance to port activation. All of this results in virtually seamless migrations and lower CLEC costs.

**Q. HOW ARE THESE BENEFITS ACHIEVED?**

A. In essence, under the batch process, a CLEC will be permitted (but not required) to earmark specified hot cut orders for batch processing. In each central office, orders submitted for batch processing will be held until a “critical mass” of such orders is reached.

The size of the critical mass will vary from office to office. The manager of each individual central office, based on the volume of cuts and the optimum level of frame staffing, will determine the number of lines that will constitute a critical mass *in that office*. For example, a “critical mass” might be achieved relatively rapidly in an extremely busy staffed office, while a remote, less active office might accumulate orders until a technician makes a scheduled visit to the office.

**Q. WOULD THERE BE ANY LIMITS ON THE AMOUNT OF TIME THAT THE ORDER WILL BE HELD?**

A. Yes. Initially the minimum holding period will be ten business days and a maximum period will be 35 business days. Once we determine the “float rate” of

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hot cuts for each CO, this holding period will be adjusted. In addition, Verizon is exploring other new features that will help CLECs to determine the next available cut date prior to submitting their LSRs.

**Q. HOW WOULD THE CLEC KNOW WHEN THE CUTOVER WILL ACTUALLY BE MADE?**

A. The LSR submitted by the CLEC will specify a due date 35 business days in the future, corresponding to the maximum holding period for the batch process. The CLEC will receive notification of the actual cutover date on or before “DD-minus-6” (*i.e.*, six days prior to the actual due date), and will be required by DD-minus-3 to give Verizon a sign-off (*i.e.*, a “go/no-go” indication) for the cut through WPTS. The sign-off will verify that there is dial tone on the CLEC facility that will be used to serve the customer.

**Q. WHAT WILL HAPPEN WHEN THE CRITICAL MASS IS REACHED?**

A. When the critical mass is reached, the “batch” will be created. The orders in the batch will be re-dated to show the new due date (which will generally be six days after the batch is created), the CLEC will be notified, and Verizon will begin preparing for the cutover. The cutover process will differ in one very significant way from the current Large Job process. As a condition of utilizing the batch process, CLECs would be required to authorize Verizon to submit the final number-port activation order to NPAC in place of the CLEC. This will virtually eliminate the need for coordination with the CLEC at the time of the cutover. In order to facilitate this process, the CLEC will be required to include in its DD-

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minus-3 sign-off a verification that it has created a port order in the NPAC database for Verizon to activate on the due date.

**Q. WILL NPAC ACCEPT A PORT NOTIFICATION FROM VERIZON WHEN THE LINE IS BEING CUT OVER TO A CLEC?**

A. Verizon has discussed this matter with NPAC, which has indicated that it would be willing to accept the port notification provided that appropriate authorization is provided by the CLEC.

**Q. WOULD THERE BE ANY OTHER DIFFERENCES BETWEEN LARGE JOB PROCESSING AND BATCH PROCESSING OF ORDERS?**

A. Yes. Because of the reduced coordination requirements, the CLEC will not need to know the precise order in which the lines will be cut. Thus, the cutover schedule will not need to be rigidly tied to the order in which LSRs are received. This will give the frame work force increased flexibility to organize the orders in a way that will reduce somewhat the time spent moving between one cut and the next.

**Q. WHAT WOULD HAPPEN AFTER A CUT IS COMPLETE?**

A. Once the cut and the number port are complete, the process will be identical to the basic and Project processes; Verizon's translations for the retail or UNE-P service previously provided to serve the customer will be removed from the switch. Upon completion of each cut, Verizon will notify the CLEC through WPTS. Verizon will also complete the service orders, thus generating a Provisioning Completion Notice ("PCN") and a Billing Completion Notice ("BCN") to the CLEC.

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**Q. HOW WOULD VERIZON MITIGATE THE IMPACT OF THE TEN-TO-35-BUSINESS-DAY HOLDING PERIOD FOR BATCH ORDERS?**

A. A CLEC would have the option of transferring the customer to UNE-P until the line is cut. This would be accomplished simply by submitting a UNE-P order for the customer before the batch hot cut order is submitted. (The UNE-P order must be complete before the hot cut order is submitted.) For batch cut orders submitted in market areas in which Verizon is relieved of its obligation to provide mass market local switching on an unbundled basis, a service functionally similar to UNE-P would be provided, but only, as noted above, for the holding period of the order. (Initially, and subject to subsequent review by the Company, Verizon proposes to price the interim UNE-P-like service at the rates currently applicable to UNE-P.)

**Q. PLEASE PROVIDE A FLOWCHART OF THE BATCH PROCESS.**

A. Such a flowchart is provided in Exhibit II-C-3.

**Q. WHAT REQUIREMENTS WOULD BE IMPOSED ON CLECS THAT WISH TO UTILIZE THE BATCH PROCESS?**

A. The nature of the process would entail certain restrictions:

- The option of putting (or keeping) the customer on a UNE-P or UNE-P-like arrangement during the holding period prior to the cut could only be made available for lines that are, before the submission of the CLEC LSR, either Verizon retail lines, resold lines, or UNE-P lines. Any other type of line would require a hot cut before a transitional UNE-P-like service could be established.

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- As noted above, the CLEC must authorize Verizon to submit the final number port notification to NPAC.
- The process would not apply to IDLC lines and to certain other loop types.
- Use of WPTS would be mandatory.
- Once the batch hot cut order has been submitted, no changes to the interim UNE-P account could be made without canceling and re-issuing the hot cut order.
- The process is not available for UNE-L to UNE-L migrations as this would involve a third party (CLEC) in the porting process.

**Q. WOULD CLEC ORDERS AUTOMATICALLY BE INCLUDED IN THE BATCH PROCESS?**

A. No. The batch process would be an optional service, not a requirement. A CLEC would have to submit an LSR specifically requesting the process.

**Q. WHAT OPERATIONAL BENEFITS WOULD THE BATCH PROCESS CREATE FOR CLECS?**

A. The batch process would greatly reduce the need for CLEC personnel to become involved in the coordination process, thus reducing the “internal” CLEC costs associated with hot cuts. The CLECs would also be able to eliminate their involvement with the porting activation, again reducing their costs.

**Q. WHAT IS THE STATUS OF THE DEVELOPMENT AND AVAILABILITY OF THE BATCH PROCESS?**

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A. Verizon is currently developing a trial program of the batch cut process to begin in the near future, and is working towards commercial availability by the end of the second quarter of 2004.

**Q. FCC RULE 319(D)(2)(II) RELATES TO STATE COMMISSION REVIEW AND APPROVAL OF A “BATCH CUT MIGRATION PROCESS.” IS THE BATCH PROCESS DESCRIBED ABOVE A “BATCH CUT MIGRATION PROCESS” WITHIN THE MEANING OF THE FCC’S RULE?**

A. Yes. Rule 319(d)(2)(ii) defines a “batch cut process” as “a process by which the incumbent LEC simultaneously migrates two or more loops from one carrier's local circuit switch to another carrier's local circuit switch, giving rise to operational and economic efficiencies not available when migrating loops from one carrier's local circuit switch to another carrier's local circuit switch on a line-by-line basis.” The process described above is consistent with that definition.

The specific requirements of Rule 319(d)(2)(ii) are set forth below:

- Rule 319(d)(2)(ii)(A)(1) requires a state commission reviewing a batch process to “first determine the appropriate volume of loops that should be included in the ‘batch.’” As noted above, we would propose to perform the cuts when a “critical mass” of lines is reached. The “critical mass” standard does not require any prior specification of an absolute minimum or maximum number of lines, which as noted will vary from office to office.
- Rule 319(d)(2)(ii)(A)(2) states that a “state commission shall adopt specific processes to be employed when performing a batch cut, taking into

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account the incumbent LEC's particular network design and cut over practices." The process proposed by Verizon is described above.

- Rule 319(d)(2)(ii)(A)(3) requires the state commission to "evaluate whether the incumbent LEC is capable of migrating multiple lines served using unbundled local circuit switching to switches operated by a carrier other than the incumbent LEC for any requesting telecommunications carrier in a timely manner, and may require that incumbent LECs comply with an average completion interval metric for provision of high volumes of loops." Timeliness is assured here by the limitations on the "holding period" for batch orders, the availability of a transitional, UNE-P-like service while the lines accumulate in the batch, and by Verizon's scalability analysis. To the extent the Commission wishes to address in metrics issues related to batch hot cuts, those issues should be addressed a metrics-related proceeding, rather than in this proceeding.
- Rule 319(d)(2)(ii)(A)(4) requires the adoption of batch hot cut rates in accordance with the FCC's UNE pricing rules. Such rates are proposed for the batch process in Part III of this testimony. The Rule further requires that these rates "reflect the efficiencies associated with batched migration of loops to a requesting telecommunications carrier's switch, either through a reduced per-line rate or through volume discounts as appropriate." Such efficiencies are reflected in Verizon's cost studies.

Although Verizon's batch process satisfies Rule 319(d)(2)(ii), as described above, it is important to note that Verizon is not required to offer a batch process.

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**Q. WHY IS THAT?**

A. The Rule requires only that the Commission “either establish an incumbent LEC batch cut process as set forth in paragraph (d)(2)(ii)(A) of this section *or* issue detailed findings explaining why such a batch process is unnecessary, as set forth in paragraph (d)(2)(ii)(B) of this section.” (emphasis added). Subsection (B) in turn states: “If a state commission concludes that the absence of a batch cut migration process is not impairing requesting telecommunications carriers’ ability to serve end users using DS0 loops in the mass market without access to local circuit switching on an unbundled basis, that conclusion will render the creation of such a process unnecessary. In such cases, the state commission shall issue detailed findings regarding the volume of unbundled loop migrations that could be expected if requesting telecommunications carriers were no longer entitled to local circuit switching on an unbundled basis, the ability of the incumbent LEC to meet that demand in a timely and efficient manner using its existing hot cut process, and the non-recurring costs associated with that hot cut process. The state commission further shall explain why these findings indicate that the absence of a batch cut process does not give rise to impairment in the market at issue.”

As we demonstrate in Part III of this testimony, these requirements are satisfied, and therefore no batch process is required. Verizon has nevertheless proposed, and is willing to offer, the process described above.



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**III. HOT CUT COSTS**

**A. Purpose Of Testimony And Background**

**Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON'S TESTIMONY?**

A. This testimony presents Verizon's analysis of the forward-looking, non-recurring costs that it incurs in connection with the processing and provisioning of CLEC-requested hot cuts using the basic, Large Job, and batch processes discussed in Part II of this testimony. We also propose rates based on those costs. This testimony does not address the non-recurring costs to Verizon of providing hot cuts pursuant to the non-WPTS process previously litigated in Case 990649B-TP, or of any other wholesale, access or retail services.

**Q. PLEASE DESCRIBE THE STRUCTURE OF VERIZON'S CURRENT HOT CUT RATES.**

A. Verizon's hot cut rates are described in Appendix A to the Pricing Attachment to Verizon's interconnection agreements in effect in Florida ("Appendix A").

Appendix A generally sets forth a rate structure involving two separate rates:

- A Service Order charge, which recovers the costs associated with processing an LSR that requires a hot cut. This charge is imposed on a per-order basis.
- A Provisioning charge, which recovers costs associated with wiring and pre-wiring activities, coordination, and other activities related to the management of the hot cut. These costs are incurred in a variety of organizations, including principally the Central Office Frame organization,

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the RCCC, the RCMAC, and the APC. This charge is assessed on a per-unit basis, with separate charges for the first and additional units.

The ordering charges are further broken down into “100% manual” and “semi-mechanized” charges. The manual charges assume the receipt of an order via fax and manual processing. Semi-mechanized assumes that some of the steps involved are automated and others are performed manually.

Each rate has associated with it an “expedite” charge that applies to requests for expedited service.

Finally, if a CLEC requests a Verizon technician to be dispatched to the field in connection with a hot cut, a Loop Facility Charge reflecting the costs associated with the Outside Plant technician will apply.

**Q. WHAT ARE THE LEVELS OF VERIZON’S CURRENT HOT CUT RATES, AND HOW WERE THOSE RATES SET?**

A. The Commission adopted rates for coordinated conversions and hot cut coordinated conversions in 990649B-TP. Those rates are currently stayed pending appeal to the Florida Supreme Court. The rates presently in effect for hot cuts on two-wire loops therefore are currently set forth in Appendix A to the Pricing Attachment: \$18.69 per order for the Service Order function and \$9.43 for Central Office Connection. These costs are in addition to the cost of the unbundled loop ordered: the rate for a 2-wire loop is \$47.25 for the Initial Service Charge and \$10.50 for Installation. There are also separate rates for the associated additional units and expedited service, and for Outside Facility Connections. The rates specified above add up to \$85.87. The average actual

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per-line rate would, of course, vary depending upon the number of orders, the number of lines included in an order, whether expedited service had been requested, and whether the order was submitted electronically or by fax. In many cases, the effective rate would be significantly below \$85.87, because of the allocation of the Service Order charge over all the lines involved in multi-line orders, and because in many cases the applicable service connection rates would be the lower “additional-unit” rates instead of the higher initial-unit rates.

**Q. WHAT HOT CUT PROCESSES WERE CONSIDERED IN VERIZON’S NEW COST STUDIES?**

A. This testimony addresses the cost of (a) the current “basic” hot cut process utilizing WPTS, and (b) the current Large Job/Project process (which also utilizes WPTS). Additionally, Verizon’s cost analysis includes the new “batch” hot cut process introduced in Part II of this testimony.

**Q. WHAT RATE STRUCTURE IS VERIZON PROPOSING HERE FOR HOT CUTS?**

A. Verizon proposes to utilize the same two-part rate structure (Ordering and Service Connection) that is set forth in its interconnection agreements and that is described above. This structure best reflects the manner in which hot-cut-related costs are incurred by Verizon.

In addition, however, a new, third rate element, the IDLC Surcharge, is now being added for cases in which Verizon is required to substitute facilities before a cut can be made — *i.e.*, primarily where the loop is provisioned using IDLC technology. This charge will apply to each IDLC-equipped loop that is being

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cutover to a UNE-L configuration. As explained in Part II of this testimony, before an IDLC-equipped line can be cut over to a CLEC, the customer's service must be switched to an all-copper or UDLC facility. The costs associated with this charge are incurred principally in four organizations: the Outside Plant, the Central Office Frame, the RCCC, and the APC.

Finally, Verizon reserves its right to recover, through a future filing, any costs associated with the implementation of OSS support for the batch process that are not recovered in existing rates.

**Q. WHAT ASSUMPTIONS DID VERIZON MAKE CONCERNING THE OPERATIONAL DETAILS OF THESE TWO HOT CUT PROCESSES?**

A. We assumed that the processes will be provisioned as described in Part II of this testimony, and in the associated exhibits.

**Q. THE FCC IS CONSIDERING MODIFICATIONS TO THE TELRIC APPROACH IN WC DOCKET NO. 03-173. WHAT IS THE RELEVANCE OF THOSE CHANGES TO THESE STUDIES?**

A. The testimony presented here is based on current TELRIC approaches, consistent with current FCC regulations and with the prior orders of the Commission. To the extent that the TELRIC methodology is changed at any time in the future, or to the extent that it is replaced by some alternative methodology, Verizon reserves its rights to submit revised rates consistent with such new methodology.

**B. Costing Methodology**

**1. In General**

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**Q. WHAT ARE NON-RECURRING COSTS?**

A. Non-recurring costs are the costs Verizon incurs in connection with the one-time activities necessary to process and provision CLEC requests for the initiation, change, or disconnection (termination) of service, or for other one-time activities related to UNEs provided by Verizon to CLECs.

Non-recurring costs are incurred in response to a specific event by a specific cost causer, and involve easily identifiable, concrete tasks. The most efficient and equitable means of recovery, accordingly, is through a one-time charge to the cost causer — *i.e.*, in this case, the CLEC that requested the hot cut.

**Q. HOW DID VERIZON ASSESS THE NON-RECURRING COSTS AT ISSUE IN THIS PROCEEDING?**

A. Verizon's "NRC Model" was modified for this purpose. Only the portions of that Model relevant to hot cuts were utilized here.

**Q. PLEASE DESCRIBE THE NRC MODEL.**

A. The NRC Model, which is provided as Exhibit III-A, implements a bottoms-up calculation that measures each cost arising in connection with servicing individual CLEC requests for UNEs and related services (in this case, hot cuts). The Model identifies all of the activities involved in fulfilling such requests, organized by the functional organizations within Verizon that perform each activity.

**Q. DESCRIBE THE STEPS UTILIZED BY THE NRC MODEL TO DETERMINE VERIZON'S NON-RECURRING COSTS.**

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A. There are four major steps in the NRC Model. First, Verizon determined the average amount of time currently required to perform each activity through a variety of methods discussed further below. Second, Verizon adjusted these times through the application of several factors, also explained below, to reflect work times in a forward-looking environment. Third, Verizon multiplied these “forward-looking” work activity times by the appropriate labor rates in order to calculate the total non-recurring costs. Fourth, Verizon applied appropriate overhead loadings (common overhead and gross revenue loading) to calculate a final rate.

**Q. HOW DO VERIZON’S COST STUDIES, AND ITS PROPOSED RATES, AVOID DOUBLE RECOVERY OF VERIZON’S COSTS?**

A. Because the work tasks identified in the Model are specific to the services at issue here (*i.e.*, various forms of hot cuts), and because measures approved in previous UNE cases have ensured that none of the costs recovered through non-recurring charges are taken into account in the development of recurring charges, Verizon’s proposed rates do not create any risk of double recovery.

**Q. HOW WAS THE NRC MODEL MODIFIED FOR THIS PROCEEDING?**

A. Although the underlying model logic remained the same, sections were included for the new hot cut processes only. Sections were also created for the IDLC Surcharge calculation, which uses a slightly different method for calculating the costs, as will be discussed below. Sections were added to explicitly calculate an expedite surcharge. Also, factors and labor rates were updated in value and for applicability to the studies at hand.

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**2. Forward-Looking Nature of Verizon's Cost Studies**

**Q. ARE VERIZON'S NON-RECURRING COST STUDIES FORWARD-LOOKING?**

A. Yes. First, the processes that are studied are themselves forward-looking, as described in Part II of this testimony. Second, the non-recurring cost studies have taken into account all anticipated efficiencies over a three-year planning period resulting from the deployment of forward-looking technology and improved processes. In conducting the studies, Verizon identified productive work times and reflected the savings due to projected system improvements and methods. Indeed, Verizon's studies reflect an extremely optimistic view regarding the potential benefits of future technologies and learned efficiencies.

**Q. DOES THE NRC STUDY PROCESS REFLECT FORWARD-LOOKING OSS?**

A. Yes. The non-recurring cost process fully reflects Verizon's implementation of forward-looking wholesale OSS and its adoption of process improvements that reflect a forward-looking efficient environment. Key attributes of this environment include:

- Electronic application-to-application ordering interface for the carrier;
- Flow through service order and work order distribution processes; and
- Mechanized coordination and communication through WPTS.

**3. Determination of Forward-Looking Work Times**

a) In General

**Q. PLEASE EXPLAIN THE STEPS USED TO DETERMINE AND ADJUST WORK TIMES IN THE NRC MODEL.**

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- A. The process of determining forward-looking work times involves the following steps:
- Identify, and map to the relevant organizations, the non-recurring ordering, wiring, and provisioning activities required for hot cuts.
  - Determine the average amount of work time required to perform each work activity when it is performed *today*.
  - Apply a “Typical Occurrence Factor” (the frequency, in percent terms, with which an activity is performed currently) to the estimate of the average work time determined in the preceding step. This produces the total average time (in minutes) consumed today for the work activity, taking into account the fact that the activity need not be performed in all cases.
  - Apply to the time identified in the preceding step a “Forward-Looking Adjustment Factor” (“FLAF”). The FLAF is a factor expressed in percent terms that reflects the reduction in frequency with which an activity is expected to be performed and/or a reduction in the time needed to complete the activity by the end of the forward-looking three-year planning period. The result of this adjustment is a forward-looking work time.

b) Identification of Relevant Activities

**Q. HOW WERE THE ACTIVITIES INCLUDED IN THE NRC MODEL FOR HOT CUTS DETERMINED?**

- A. The NRC Model contains the activities performed in each functional organization within Verizon associated with the ordering, wiring, and provisioning of hot cuts to requesting CLECs. The list of activities was developed based on input from the



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appropriate work center personnel who are engaged in the day-to-day work activities needed to satisfy CLEC hot cut service orders. This process was designed to identify a comprehensive list of the individual work steps that are or may be involved in fulfilling such requests.

c) Determination of Current Work Times

**Q. HOW WERE CURRENT AVERAGE WORK TIMES DETERMINED?**

A. In the cases of the RCCC and Central Office Frame, the current average work times in Verizon's NRC Model are based on a new rigorous survey of personnel actually involved in the relevant work functions under study. This new survey consists of a self-reported time and motion study. Field Dispatch times were developed using a sub-loop study previously filed in Docket No. 990649B-TP. For the NMC, Verizon developed costs using historical data from system-generated-reports. For the APC and the RCMAC, Verizon used commission-approved times for the centers in Verizon that have the most experience provisioning hot cut orders.

**Q. IS VERIZON'S SURVEY METHODOLOGY RELIABLE?**

A. Yes. The new Verizon times for the RCCC and Central Office Frame are based on surveys of employees who have actual experience in performing hot cuts, and the process, as described below, is designed to elicit accurate work-times for the relevant processes.

**Q. PLEASE DESCRIBE THE SURVEY PROCESS.**

A. Verizon Service Cost personnel used process workflows and discussions with supervisory personnel of the centers to develop surveys to determine the time

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required to complete various work activities. The surveys were then administered to the organizations responsible for the wiring and provisioning of hot cuts.

Verizon distributed surveys to those employees actually involved with wiring and provisioning hot cuts for Verizon's CLEC customers. Detailed instructions were provided.

The Service Cost staff monitored survey results to ensure collection of the surveys from respondents in all work groups. Substantial efforts were made to convey the importance of the process and the need for unbiased employee response.

**Q. WHAT REVIEW PROCESS DID VERIZON EMPLOY TO ASSURE THE RELIABILITY OF THE SURVEY RESULTS?**

A. The reported work times were reviewed at several levels.

First, the single points of contact in each department who distributed and collected the survey forms examined the responses. In order to maximize the response rate, if the response forms were incomplete or no response was received from an individual, the contact person went back to the respondent to obtain valid answers.

Second, the service cost analysts conducted a thorough review of the survey data. If answers were ambiguous, the cost analyst went back to the point of contact within the relevant organization to have the respondent provide a clearer response.

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In a handful of cases, the survey form was disregarded entirely because it was either blank or had incorrectly populated entries and the point of contact was unable to obtain a valid response.

Third, the frequency distribution of the responses (*i.e.*, the amount of time that the value of each response appeared) was reviewed for each work activity on a per-unit basis. The data set was then trimmed by eliminating the 10% of responses with the highest time estimates and the 10% of responses with the lowest time estimates. This is a standard statistical tool employed to eliminate potential biased responses. It is the same method used in Olympic Scoring of events where the highest score and the lowest score of a ten judge panel are dropped, and the remaining eight scores are averaged together.

**Q. HOW WERE TIMES DETERMINED FOR FIELD DISPATCH ACTIVITIES?**

A. Field work data for the hot cut activity is based on a sub-loop time and motion study conducted to determine travel time and the time it takes to perform various activities that may be required in the field.

**Q. HOW WAS SYSTEMS DATA USED TO DEVELOP CURRENT TIMES FOR THE NMC?**

A. Decision Support System ("DSS") results were used to collect handling times and other work functions reported on a Verizon West (former GTE) basis. The centers responsible for processing LSRs and ASRs are considered "virtual environments" meaning that LSRs and ASRs for all states use the same process and level of mechanization. DSS provides a data warehouse used to collect and store data from numerous legacy systems and is the common tool for

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performance reporting of productivity and quality. Verizon's DSS tool has been designed to assist Wholesale Services Customer Centers in their quest for continuous improvement. The web-based reporting tool provides objective ordering process data that help Managers and Coaches understand the overall performance of their team and the contributions to the Center's productivity. DSS provides center level information on productivity volumes and quality for call and ordering activity. DSS was first deployed in the Verizon West National Market Centers (NMC).

d) Application of Occurrence Factors to Current Work Times

**Q. EXPLAIN THE PROCESS BY WHICH CURRENT AVERAGE WORK TIMES ARE ADJUSTED IN THE NRC MODEL TO REFLECT THE FREQUENCIES WITH WHICH EACH ACTIVITY IS PERFORMED.**

A. Current average work times are adjusted within the NRC Model by multiplying the average time it takes to perform an activity (when it in fact occurs) by the frequency with which the activity is expected to be performed — *i.e.*, the estimated percentage of cases in which the activity will be required. The result is an average time required for the activity across all orders — those in which it is required, and those in which it is not. Field managers (*i.e.*, the managers of those personnel who completed surveys) were polled by the cost analysts to determine in today's environment how frequently a given activity is performed in the ordering, wiring, and provisioning of hot cuts. As a result of this poll, Verizon developed a Typical Occurrence Factor to reflect and adjust for the frequency with which each activity is performed.

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- e) Adjustment of Current Work Times to Develop Forward-Looking Work Times

**Q. PLEASE EXPLAIN HOW FORWARD-LOOKING ACTIVITY TIMES WERE DEVELOPED.**

A. As noted above, average current work times were adjusted by applying a FLAF to the total time currently required to perform the work. The adjustments reflect future operating conditions assuming anticipatable improvements in processes, productivity, and mechanization, including enhancements to OSS resulting in reduced work times and/or increased electronic "flow-through" in Verizon's automated systems. The FLAF accounts both for anticipated reductions in the frequency with which an activity must be performed and reductions in the time needed to perform the activity.

**Q. WHY IS THE USE OF CURRENT AVERAGE WORK TIMES A REASONABLE STARTING POINT FOR ESTIMATING FORWARD-LOOKING COSTS?**

A. Current average work times are a reasonable starting point for estimating forward-looking costs because the current average times are known and measurable. Attempting to determine forward-looking work times without using current times as a baseline would amount to nothing more than speculation.

**Q. HOW WERE THESE FLAFS DEVELOPED?**

A. The subject matter experts within the functional organization most familiar with the hot cut processes were asked to identify the impacts of any known system or process improvements expected over the three-year planning period. In some cases, Service Cost personnel applied an even more aggressive FLAF to account for likely improvements which would result from other factors.

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f) Other Issues

**Q. HOW WERE WORK TIMES DETERMINED FOR PROCESSES THAT VERIZON HAS NOT OFFERED REGULARLY IN THE PAST, AND FOR WHICH THE SURVEY APPROACH DESCRIBED ABOVE IS THEREFORE INAPPLICABLE, SUCH AS THE NEW BATCH PROCESS?**

A. To a great extent, the activities performed in the batch process correspond to similar activities performed in the Large Job process. In concert with the subject matter experts, Service Costs personnel examined each activity identified under the Large Job process for applicability and impact to the batch process.

**Q. HOW WERE WORK TIMES DEVELOPED FOR FOUR-WIRE HOT CUTS?**

A. Most of the relevant activities would require the same work time regardless of whether the circuit to be converted is a two-wire or a four-wire circuit. However, for those activities that can be assumed to vary linearly with the number of pairs (*e.g.*, physical wiring work on the frame), the activity time calculated for the two-wire hot cut was simply doubled for the four-wire hot cut.

**Q. WHY DID YOU NOT USE THE SURVEY PROCESS DIRECTLY FOR THE FOUR-WIRE HOT CUTS?**

A. There were no appropriate four-wire hot cuts scheduled during the time that the survey data was being collected.

**Q. HOW DID YOU DETERMINE THE COSTS ASSOCIATED WITH HOT CUTS ON INITIAL LINES VERSUS HOT CUTS ON ADDITIONAL LINES (WITHIN A SINGLE ORDER)?**

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A. For those activities that are expected to be performed in the same fashion regardless of the number of lines (*e.g.*, those in the NMC), the time associated with the activity was assigned to the initial line and zeroed out for the additional line. For activities in the RCCC and the CO Frame, a robust linear regression analysis was performed on the data set to identify whether there was a non-variable component of the activity. This non-variable component was assigned all to the initial line. The variable component was then included on all lines (initial as well as additional).

**Q. HOW DID YOU DETERMINE WHETHER THIS “A + B X” APPROACH WAS MEANINGFUL?**

A. Given an activity with a sufficient number of samples, if the t-statistic for both the intercept (non-variable component) and slope (variable component) were high enough to indicate a strong relationship in the data, then the “a + b x” results were used rather than the calculated mean.

**Q. HOW DID YOU DETERMINE THE APPROPRIATE TRAVEL TIME TO AN UNMANNED CENTRAL OFFICE?**

A. Verizon used the same sub-loop time and motion study previously discussed that was used to determine field work or field dispatched activities.

**Q. HOW DID YOU DETERMINE THE TIME ASSOCIATED WITH PROCESSING A REQUEST FOR AN EXPEDITED DUE DATE?**

A. A request for an expedited hot cut will automatically cause the order to drop out to the NMC. The NMC should then contact the RCCC to see if the earlier due date can be accommodated. The RCCC would respond back to the NMC and

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either deny the request or approve the earlier due date. The NMC should request the CLEC to submit a supplemental order, and the order will be modified with the new due date. All expedites need to get an approval from the frame or field before the RCCC manager will approve the earlier due date.

As a result, the work times or Typical Occurrence Factors for the relevant connect activities in the NRC Model were adjusted. In the RCCC and C.O. Frame, the activity "Analyze Hot cut Order" was set to 200% since it will be done twice – once when the NMC seeks confirmation that the earlier due date can be met and once when the order is actually issued and worked. For the NMC, data from Verizon's systems identified the time associated with performing the required activities to answer the request for an expedite. The difference in time between the expedite versus regular due date for each organization was then calculated.

**Q. HOW DID YOU DETERMINE THE TIME ASSOCIATED WITH THE IDLC SURCHARGE?**

A. First, there was one explicit activity identified in the RCCC. Second, it was assumed that the APC would be involved for assignment purposes. Third, a new line needs to be established at the frame. If a spare copper or UDLC facility to the SAI exists, this needs to be done once. If a spare copper or UDLC facility to the SAI does not exist, this needs to be done at least twice – once (or more) to move a different in-service customer to a new facility and once to move the customer for whom the hot cut is being requested. However, once this is done, the time identified in the central office frame for the hot cut itself is credited out of



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the cost study. Fourth, outside plant engineers were questioned as to the amount of time needed to perform the transfers out at the SAI. Finally, an estimated percentage was applied to reflect how often a spare copper or UDLC facility would exist in the SAI serving the customer for whom the hot cut is being requested.

**4. Application Of Forward-Looking Labor Rates To Determine Forward-Looking Direct Costs**

**Q. HOW ARE THE WORK TIMES CONVERTED INTO COSTS?**

A. The first step in the conversion is the multiplication of the work times by the relevant labor rates.

**Q. PLEASE EXPLAIN HOW LABOR RATES WERE DEVELOPED IN THE NRC MODEL.**

A. Verizon's starting point for developing the labor rates was the base-year 2002 basic wage expense for each Job Title divided by the total productive hours for employees within that Title.

**Q. WHAT IS A JOB TITLE?**

A. The Job Title is a descriptor used by Verizon to identify a specific type of work function, such as a Representative-NMC.

**Q. WHAT IS A "PRODUCTIVE HOUR"?**

A. Productive hours are the time spent on specific job functions, such as preparing orders and provisioning loops. Labor rates must also recover the cost associated with an employee's non-producing time for activities such as clerical support and supervision of reporting personnel, as well as the costs for paid absence,

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premium time, payroll taxes, and benefits. These expenses are distributed over productive hours to produce the total directly assigned labor cost per hour.

**Q. HOW WERE THE LABOR RATES FOR THIS FILING DEVELOPED?**

A. The labor rates were developed using total year 2002 expenses from data sources such as payroll records and time sheets.

**Q. WERE THE LABOR RATES TRENDED FORWARD FOR PURPOSES OF THESE COST STUDIES?**

A. Yes. The NRC Model averages the labor rates over a three-year planning period (2004-2006), for which Verizon believes realistic predictions can reasonably be made of the expected process times. The 2002 labor rate data was trended to the middle of 2005. This labor rate at the midpoint of the planning period is considered to be the average over the entire planning period. The Labor Trend Factors used to bring the 2002 labor rates to 2005 is 1.04 for each year of the period from 2002 to 2005. The factor is based on Verizon's estimate of non-management annual salary increases based on the currently effective most recent labor agreements.

**5. Application of Factors and Other Adjustments To Direct Labor Costs**

**Q. WHAT FINAL ADJUSTMENTS WERE MADE TO THE FORWARD-LOOKING LABOR COSTS TO DETERMINE THE FINAL NON-RECURRING COSTS FOR PURPOSES OF THIS STUDY?**

A. After applying the forward-looking labor rate to yield the forward-looking direct costs, two more steps were taken to determine the final costs. First, Verizon multiplied the total cost figure by the Common Overhead Factor, in order to

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apportion common overhead expense to the direct non-recurring costs. The Common Overhead Factor does not include any labor expenses from the functional organizations that are directly assigned to non-recurring costs. Second, Verizon assigned to the direct plus common costs a Gross Revenue Loading ("GRL") by multiplying the costs identified in the previous step by the GRL Factor. This factor recovers uncollectibles and the State and Federal Communications Commission assessments that Verizon is required to pay under applicable law.

**Q. WHAT VALUES WERE USED FOR THE COMMON OVERHEAD FACTOR AND THE GROSS REVENUE LOADING?**

A. The values are set forth in Exhibits III-C and III-D.

**Q. PLEASE EXPLAIN WHY FOR THE GRL EXCLUDED THE IMPACTS OF SIGNIFICANT ONE-TIME EVENTS.**

A. We excluded the effects of the WorldCom and Genuity bankruptcies from the calculation of the uncollectible rates in order to be conservative. Excluding the effect of the WorldCom and Genuity bankruptcies may cause the uncollectibles rates calculated here to understate the actual level of uncollectibles that will be experienced going forward, but it eliminates any potential argument that including the effect of the WorldCom or Genuity bankruptcies would overstate the expected future level of uncollectibles.

**C. Results Of The Cost Analysis And Proposed Rates**

**Q. WHAT ARE THE RESULTS OF VERIZON'S NEW COST STUDIES, AND WHAT RATES IS IT PROPOSING BASED ON THOSE STUDIES?**

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A. The rates are set forth in Exhibit III-A.

**Q. DO THE SERVICE ORDER, CENTRAL OFFICE WIRING, AND PROVISIONING RATES DERIVED HERE APPLY TO ANY NON-RECURRING ACTIVITY OTHER THAN HOT CUTS?**

A. No.

**Q. ARE THE RESULTS OF THE STUDY STATISTICALLY VALID?**

A. Yes. The study approach and the sample sizes obtained should yield reasonable precision for the estimated hot cut costs presented in this testimony.

**IV. SCALABILITY**

**A. Purpose Of Testimony**

**Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON'S TESTIMONY?**

A. In this Part of its testimony, Verizon shows that its hot cut process is scalable, in that it can be used to handle the greater volumes of hot cuts and related work that would be expected to result from the elimination of local switching as an unbundled network element in Florida (and the consequent elimination of UNE-P as a competitive entry and provisioning strategy for CLECs). The analysis is based on the conservative customer migration estimates developed by Dr. William E. Taylor in his testimony.

**B. Background And Overview**

**Q. WHICH OF THE HOT CUT PROCESSES DESCRIBED IN PART II OF THIS TESTIMONY IS ASSUMED FOR PURPOSES OF VERIZON'S SCALABILITY ANALYSIS?**

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A. For purposes of this analysis, we have assumed that the “basic” hot cut process would be utilized. Although in a real post-UNE-P environment, Large Job and batch processing would undoubtedly account for a significant percentage of hot cut orders, particularly in the conversion of the embedded base, this scalability analysis is limited to the basic process. Since, as noted previously, the Large Job and batch processes enable Verizon to make more efficient use of its work force than the basic process, the analysis presented here is conservative (*i.e.*, biased towards overestimation).

**Q. WILL ANY CHANGES HAVE TO BE MADE TO THE BASIC PROCESS TO ACCOMMODATE INCREASED HOT CUT DEMAND?**

A. No. The process itself is flexible enough to accommodate a large range of demands.

**Q. WHAT CHANGES WOULD BE REQUIRED TO HANDLE INCREASED DEMAND?**

A. As with all non-recurring functions, the basic input is work time, and the basic constraint on the volume of work that can be handled is the size of the relevant work force. Verizon’s basic approach to meeting increased demand would be to appropriately increase the size of the work forces at its central offices and at work centers such as the NMC and the RCCC.

**Q. PLEASE PROVIDE AN OVERVIEW OF THE SCALABILITY ANALYSIS PRESENTED HERE.**

A. The first step in the analysis is the determination of the number of additional workers that would have to be added in various work centers to meet the

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incremental demand for hot cuts and related activity resulting from the elimination of UNE-P. This analysis is performed by a spreadsheet model which is described in greater detail below.

The second phase of the analysis considers hiring, training, work space, and other issues, in order to show that the force expansion that would be required is feasible, and that no external constraint (such as limitations in the size of central offices) would prevent Verizon from achieving the requisite hot cut volumes.

**C. The Force-Load Model (“FLM”)**

**Q. WHAT MODEL IS VERIZON USING TO ESTIMATE THE ADDITIONAL FORCE REQUIREMENTS THAT WOULD RESULT FROM THE ELIMINATION OF UNE-P?**

A. Verizon has developed a spreadsheet model that we refer to as the “Force-Load Model” (“FLM”). A working, electronic copy of the Model is provided in Exhibit IV-A, and Model documentation is provided in Exhibit IV-B. The model can be run on a personal computer using any recent version of Microsoft Excel.

**Q. WHAT IS THE FIRST PHASE OF THE ANALYSIS PERFORMED BY THE FLM?**

A. The first phase is the determination of the incremental level of hot cuts and Verizon winbacks that would be required in a post-UNE-P world. This incremental hot cut demand has two components: the incremental demand resulting from the normal movement of customers between carriers, and the incremental demand resulting from the conversion of the embedded base. It

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should be emphasized that the FLM seeks to predict *incremental* (i.e., additional) work resulting from the elimination of UNE-P, not total work levels.

The work volume estimates are based on the assumptions and data described in the testimony of Dr. Taylor.

Because the embedded base conversion is a temporary phenomenon — i.e., it will be completed within a 27-month period — the analysis necessarily reflects a changing incremental work load over time.

**Q. WHAT IS THE NEXT STAGE OF THE FLM'S ANALYSIS?**

A. Next, the Model converts the incremental work requirements into incremental staffing levels. In general, this is done by converting work loads to work times, which are then converted into incremental force requirements.

**Q. PLEASE EXPLAIN HOW THE INCREMENTAL HOT CUT AND WINBACK DEMAND RESULTING FROM CUSTOMER MIGRATION IS CONVERTED INTO INCREMENTAL STAFFING NEEDS IN THE CENTRAL OFFICE.**

A. First, the number of hot cuts and winbacks is allocated among all of Verizon's central offices in Florida. Since detailed data on the total number of hot cuts per office is not available, this was done by allocating the total demand on the basis of the number of UNE-P lines in each central office. The number of UNE-P lines is a good indicator of the current level of competitive activity in a particular office, which in turn provides the best way to predict hot cut levels in a post-UNE-P environment.

**Q. WHAT IS THE NEXT STEP?**

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A. Next, the total number of incremental hot cuts and winbacks is converted to incremental minutes of frame technician work, based on factors reflecting the minutes required to cut over or install each line. These factors are derived from Verizon's WFA system but are consistent with the current work times determined in Verizon's cost studies.

Incremental work time is then converted into an incremental work force level through division by a factor representing a standard number of minutes per month for a central office technician.

The force levels are then adjusted by a standardized factor reflecting an allocation of time to sick time, vacations, and training. Incremental supervision requirements are accounted for by applying an associate/manager ratio to the incremental number of associates determined through the analysis described above.

**Q. HOW ARE IDLC LINES HANDLED IN THE MODEL?**

A. The techniques are very similar, except here there is an additional level of incremental work required for outside dispatches.

**Q. HOW ARE INCREMENTAL WORK REQUIREMENTS IN THE NMC, RCCC, AND OTHER WORK CENTERS ACCOUNTED FOR?**

A. Techniques similar to those described above for central office technicians are utilized, with the following variations: (a) The work loads at the NMC and the RCMAC are proportional to the number of orders handled, not the number of lines; (b) NMC and LNP demand are driven largely by the number of non-flow-through orders handled, so that flow-through levels need to be factored into the



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analysis; and (c) Winback orders do not give rise to any work requirements in the RCCC.

**Q. PLEASE DESCRIBE THE ANALYSIS USED FOR THE CONVERSION OF THE EMBEDDED BASE.**

A. The analysis is similar to the analysis of incremental hot cut demand resulting from customer migration, as described above. The volumes were determined as described in Dr. Taylor's testimony. The FLM addresses demand for five periods starting with the submission of the embedded base conversion plan to the Commission at the end of Month 2 (all months being measured from the Commission's non-impairment determination). The five periods are: (a) Months 3 through 5 (during which the CLEC may continue ordering new UNE-Ps); (b) Months 6 through 13 (the remainder of the first 13-month embedded-base conversion period); (c) Months 14 through 20 (the second, 7-month embedded-base conversion period); (d) Months 21 through 27 (the last, 7-month, portion of the embedded base conversion period); and (e) Months 28 forward (the post-conversion "steady state" period). During the embedded base conversion, both the conversion itself, and customer migration, are taken into account. After the conversion is completed, the only incremental demand remaining is caused by customer migration.

**Q. IN MOST CASES, THE FLM PREDICTS A NON-INTEGRAL NUMBER OF INCREMENTAL WORKERS AT EACH CENTRAL OFFICE (0.13 WORKERS, 0.57 WORKERS, ETC.). HOW DOES THE FLM HANDLE THIS?**

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A. A very conservative approach would be to round up to the next highest whole number in each central office and work center. For the central offices, however, this approach would be excessively cautious. For example, a cluster of central offices in a rural area, each of which requires (say) an incremental staff of 0.1 people, could be handled by a single person traveling from office to office as needed. Indeed, this is the strategy currently used in many rural areas, where many of the central offices are currently unstaffed. Within such clusters, the fractional workers can simply be added together rather than rounded up before adding.

More generally, requirements for fractional workers *outside* of clusters can be handled by job shifting and overtime within the framework of existing staffing levels. Thus, outside of clusters, standard rounding is applied at the individual central office level.

**Q. WHAT WAS THE BASIS FOR ASSIGNING CENTRAL OFFICES TO CLUSTERS WITHIN THE FLM?**

A. Essentially, a cluster is defined as any group of central offices located near enough to each other to permit the use of a traveling work force.

**D. Hiring, Training, And Resource Issues Associated With The Work Force Expansion**

**Q. HOW WOULD VERIZON MEET THE INCREMENTAL HIRING LEVELS PREDICTED BY THE FLM?**

A. In general, the elimination of UNE-P, a basic premise of the analysis, would free up a large number of workers handling UNE-P-related tasks in central offices and

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at work centers; this could account for some of the new work force needs. We would, however, expect to rely in part on new hires.

**Q. HOW DOES VERIZON HIRE NEW EMPLOYEES FOR ITS CENTRAL OFFICES AND FOR WORK CENTERS SUCH AS THE NMC?**

A. Verizon's current collective bargaining agreement specifies a process under which a certain percentage of job openings must be offered first to current employees. Otherwise, the jobs can be filled through new hires. Verizon's standardized hiring processes would be used for this purpose.

**Q. WHAT QUALIFICATIONS DOES VERIZON REQUIRE FOR AN APPLICANT FOR A CENTRAL OFFICE OR WORK CENTER REPRESENTATIVE POSITION?**

A. Generally, there are no educational requirements for new hires to associate positions, although a high school or equivalent diploma is preferred. Applicants are required to pass a battery of tests that measure situational judgment and basic cognitive skills. A physical and drug screening are also required and, for field technician jobs, requirements for working aloft.

**Q. DOES VERIZON BELIEVE IT CAN HIRE THE NUMBER OF PEOPLE REQUIRED IN A RELATIVELY SHORT PERIOD OF TIME? IF SO, WHY?**

A. Yes. First, a sufficient number of potential employees are clearly available. Because of force reductions in the telecommunications industry over the last several years, there is a large pool of experienced workers available to fill incremental staffing needs. Indeed, because the qualifications for these positions are relatively modest, as described above, Verizon would not be limited

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to hiring experienced telecommunications workers. An analysis of current unemployment statistics for Florida provided by Dr. Taylor in his testimony shows that qualified job seekers are available in numbers far exceeding those that would be required by Verizon.

Third, the well-publicized meltdown in the global telecommunications industry has resulted in massive layoffs and force reductions. Until recently, the *Financial Times* maintained a website tracking announcements of layoffs by major communications employers. According to this compendium, between July 2000 and May 2002, the global telecom sector cut approximately 539,000 jobs.<sup>3</sup> In the U.S., as of May 2002, Qwest, BellSouth and Verizon had announced job cuts of 13,000, 4,200 and 7,500 respectively. In September 2002, SBC announced a reduction of 11,000 jobs, in addition to the 10,000 jobs eliminated in the first three quarters of 2002.<sup>4</sup> AT&T's announced layoffs amounted to 10,000 jobs by May 2002.

Fourth, FCC data on U.S. telephone employment also shows a dramatic reduction, continuing into 2003. Based on preliminary data through March 2003, total employment has fallen by about 160,000 jobs from its peak in 2001. See Exhibit IV-C.

In sum, all indications from the labor markets suggest that sufficient workers are available to manage the expected additional work load from incremental hot cuts.

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<sup>3</sup> See <http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT3MOCS3OPC>, the FT.com Telecoms job cuts watch, last updated May 14, 2002. This figure includes telecom operators, cable operators and network equipment providers, categories that have been particularly hard hit.

<sup>4</sup> "SBC to Cut 11,000 Jobs and Investment Due to Outmoded Regulatory Scheme and Weak Economy," SBC Press Release, September 26, 2002.

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**Q. WHAT STRATEGY WILL VERIZON USE FOR FILLING THE INCREMENTAL WORK FORCE NEEDED TO HANDLE THE EMBEDDED BASE, GIVEN THE FACT THAT THOSE PEOPLE WOULD ONLY BE NEEDED FOR A MAXIMUM OF 27 MONTHS?**

A. Verizon has the ability to hire temporary workers for up to one year. Those workers can be terminated or converted to full-time employees at the end of the one-year period.

**Q. WHAT TRAINING WOULD BE REQUIRED FOR THE NEW CENTRAL OFFICE TECHNICIANS AND SERVICE REPRESENTATIVES AT THE WORK CENTERS?**

A. Training requirements vary depending on job title. For the central office environment, both Central Office Technicians and Frame Specialist titles are utilized to perform hot cut activity. Formal training includes a hands-on basic frame course, hot cut certification training, and courses designed to utilize OSS for managing work and on-the-job training. The work centers employ a formal instructor-led course, a CBT course, and on-the-job training. Here again, the training is focused on the specific tasks associated with the job requirements and covers use of OSS, line translations, database, customer contact skills and order entry, to name a few.

**Q. HOW LONG WOULD IT TAKE TO PUT TRAINED WORKERS IN PLACE?**

A. A trained workforce could be put in place relatively quickly. In accordance with Verizon's standard training requirements, new central office technicians would be required to attend approximately 20 hours of training, which could be provided

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within a single week. Service representatives would require approximately 112 hours of training, delivered over three weeks. Since the projected demand will not materialize all at once, Verizon will have time to hire and train the necessary staff on a rolling basis.

**Q. WILL WORK SPACE (OFFICE SPACE) AND FACILITIES (COMPUTERS, ETC.) BE AVAILABLE AT THE LEVELS REQUIRED FOR THE NEW EMPLOYEES?**

A. Yes. Verizon's force levels have been significantly reduced in the recent past, which will make it easier to provide office space, computers, and other needed office tools for new employees. Also, existing office space has been consolidated, freeing up additional space. Making new office space and facilities available, to the extent necessary, should not impose any insurmountable obstacles. Verizon has frequently had to provide space and facilities for additional staff on a rapid basis (*e.g.*, in connection with the establishment of new work centers).

**Q. WITH SPECIFIC REFERENCE TO CENTRAL OFFICE WORK, WILL THE ADDITIONAL FORCE REQUIREMENTS LEAD TO CROWDING THAT COULD INTERFERE WITH NORMAL WORK AT THE FRAME?**

A. No. The necessary additional hiring would merely bring the level of frame activity closer to staffing levels prevailing in earlier years, at which crowding was not a problem.

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**Q. ARE VERIZON'S OSS CAPABLE OF HANDLING THE ADDITIONAL ORDERING ACTIVITY THAT WOULD BE ASSOCIATED WITH THE ELIMINATION OF UNE-P?**

A. Yes. Indeed, Verizon would not expect overall ordering levels to increase significantly, since by and large UNE-P orders would simply be replaced by UNE-L orders. In any event, Verizon's OSS are robust and are scalable to support significant increases in transaction volumes.

Verizon follows a comprehensive capacity management process to ensure that its systems have sufficient capacity to handle current and projected volumes. Capacity management is an ongoing process. Verizon collects key system performance data such as CPU utilization, memory utilization, and transaction volumes. Verizon analyzes the performance data and identifies any servers that are exceeding pre-defined utilization thresholds. Verizon also extrapolates from existing performance data to anticipate future utilization based on predicted transaction workload. Based on the utilization data and the predicted future needs, Verizon develops specific action plans for addition system tuning, application architecture changes, and infrastructure upgrades for hardware and system software components.

**Q. CAN NPAC HANDLE THE ADDITIONAL DEMAND FOR NUMBER PORTING THAT WOULD BE ASSOCIATED WITH A SHIFT FROM UNE-P TO UNE-L?**

A. Yes. In an *ex parte* submission to the FCC, the current number portability administrator, NeuStar, states that the NPAC database has the capability to handle in excess of 25 telephone number ports per second, a level of

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performance that should be ample to support any conceivable increase in hot cut demand. Note that 25 ports per second amounts to approximately 65 million ports per month. However, NeuStar's web site indicates sufficient overall NPAC capacity for "tens of millions" of transactions per day, corresponding to hundreds of millions of transactions per month. (See <http://www.neustar.com/numbering/npac.cfm>.) Our estimated volume of incremental hot cuts for Florida is less than 40,000 per month. Thus, the additional demand on the NPAC database would amount to much less than one percent.

\* \* \*

**Q. DOES THIS CONCLUDE THE PANEL'S TESTIMONY?**

**A. Yes.**



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*Consulting Economists*

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**TESTIMONY OF WILLIAM E. TAYLOR**

**ON BEHALF OF**

**VERIZON FLORIDA**

**Docket Nos. 030851-TP and 030852-TP**

**December 4, 2003**

**Public Version**

1 **I. INTRODUCTION**

2 **A. Background and Qualifications**

3 Q. Please state your name, occupation and business address.

4 A. My name is William E. Taylor. I am Senior Vice President of National Economic  
5 Research Associates, Inc. ("NERA"), head of its telecommunications economics  
6 practice, and head of its Cambridge office. My business address is One Main Street,  
7 Cambridge, Massachusetts 02142.

8 Q. Please summarize your qualifications.

9 A. I have been an economist for over twenty-five years. I received a B.A. degree in  
10 economics (Magna Cum Laude) from Harvard College in 1968, a master's degree in  
11 statistics from the University of California at Berkeley in 1970, and a Ph.D. in  
12 Economics from Berkeley in 1974, specializing in industrial organization and  
13 econometrics. I have taught and published research in the areas of microeconomics,  
14 theoretical and applied econometrics, and telecommunications policy at academic  
15 institutions (including the economics departments of Cornell University, the Catholic  
16 University of Louvain in Belgium, and the Massachusetts Institute of Technology) and  
17 at research organizations in the telecommunications industry (including Bell  
18 Laboratories and Bell Communications Research, Inc.). I have testified on  
19 telecommunications economics before numerous state regulatory authorities, the  
20 Federal Communications Commission, the Canadian Radio-Television and

1 Telecommunications Commission, the New Zealand Commerce Commission, federal  
2 and state congressional committees and courts. I have testified frequently before this  
3 Commission, recently in Docket Nos. 030869-TL, 020507-TP, 020119-TP and 020578-  
4 TP regarding rate rebalancing, bundling and promotional offerings.

5 A copy of my vita listing publications and testimonies is shown as WET-Exhibit 1.

6 **B. Purpose of the Testimony**

7 Q. What is the purpose of your testimony?

8 A. I have been asked by Verizon Florida (“Verizon”) to provide estimates of the likely  
9 number of additional hot-cut requests (over current levels) that Verizon will experience  
10 if: (a) the Commission finds that CLECs would not be impaired without access to “mass  
11 market” unbundled local switching, and (b) as a result, UNE-P is eliminated as an  
12 option for competitors providing local exchange service to end-user customers in this  
13 State. In other Verizon testimony, these estimates of incremental hot cut volumes are  
14 used as the input to a model assessing the “scalability” of the hot cut process.

15 The estimates are highly conservative in that if they err, they err on the side of  
16 overestimating the hot-cut demand that Verizon would face in a post-UNE-P  
17 environment. This is true for several reasons that will be discussed in greater detail  
18 below, but two reasons in particular should be noted here.

19 First, for purposes of our analysis, we have assumed that UNE-P will be eliminated  
20 throughout the Verizon Florida territory even though under the Triennial Review Order  
21 impairment standards, determinations for mass-market local switching will be made on

1 a “market area” basis. This Commission may ultimately conclude that CLECs would be  
2 impaired in some market areas within Verizon Florida’s territory but not in others. In  
3 such cases, the number of incremental hot cuts would be less than that estimated in this  
4 testimony.

5 Second, some CLECs may, upon the elimination of UNE-P, migrate to non-UNE-L  
6 alternatives such as resale or (particularly in the case of cable companies) may choose  
7 to provide their own switching and loop facilities. Hot cuts would not be required for  
8 migrations from Verizon to any of these alternatives.

9 **C. Summary of Main Conclusions**

10 Q. Please summarize your conclusions.

11 A. In the current environment, certain changes that customers and carriers make regarding  
12 local service provisioning result in hot cut (or reverse hot cut) requests to Verizon.  
13 Under the terms of the *Triennial Review Order*, that environment may change. If the  
14 Commission determines that CLECs would not be impaired in some markets if Verizon  
15 stops offering local switching as a UNE, then two things will happen:

- 16 • Some customer or carrier-initiated changes that did not require a hot cut in the past  
17 may require a hot cut in the post-UNE-P environment, and
- 18 • Some portion of the current embedded base of UNE-P customers may be migrated  
19 over time to UNE-L service and that migration will also require additional hot cuts.

20 For both of these reasons, the volume of hot cut requests to Verizon can be expected to  
21 increase in a post-UNE-P world.

1 Q. Please describe the changes in demand for hot cuts that would be expected in a post-  
2 UNE-P world as a result of customer-initiated carrier changes.

3 A. In the post-UNE-P world, many CLECs may substitute UNE-L for UNE-P  
4 arrangements for serving their customers, and subsequent migrations of customers  
5 between such UNE-L CLECs (or from Verizon to a UNE-L CLEC) would require hot  
6 cuts. However, as noted above, some CLECs may choose to resell Verizon's retail  
7 service or use their own loop and switch facilities, and migrations between such CLECs  
8 and Verizon's retail service would not require hot cuts. Thus, a "conservative" (in the  
9 sense of biased toward overstatement) estimate of the incremental hot cut requests that  
10 Verizon will face in a post-UNE-P world is given by a forecast of the flow of requests  
11 processed by Verizon for migrations between UNE-P CLECs or migrations from  
12 Verizon's retail service to a UNE-P CLEC. Similarly, the flow of winbacks — the  
13 migration of customers from CLECs' UNE-P service to Verizon — provides an  
14 estimate of the incremental demand for reverse hot cuts.

15 Q. Why does the approach described above result in a conservative estimate of incremental  
16 hot cut (and reverse hot cut) activity resulting from the elimination of UNE-P?

17 A. Aside from the reasons already discussed, there are several additional reasons why these  
18 measures based on current migration activity result in conservative estimates for  
19 incremental hot cut and reverse hot cut activity in a post-UNE-P world.

20 First, increased intermodal competition for traditional wireline telephone service means  
21 that an increased number of customers who are dissatisfied with their wireline provider,  
22 or who simply prefer the functionalities that alternative technologies might offer, will

1 migrate to non-wireline substitutes, primarily wireless, cable, and Internet telephony.  
2 All else equal, the growth of these substitutes will reduce the proportion of hot cut and  
3 reverse hot cut requests associated with a given level of wireline customer churn. In  
4 this case many customers might leave Verizon in the future, but fewer of them will  
5 migrate to a wireline competitor. Hence, the number of hot cuts associated with those  
6 migrations will fall.

7 Second, the increased offering of bundled communications services by all providers  
8 (ILECs, CLECs, wireless and cable) has the effect of reducing customer churn, all else  
9 equal. Intuitively, bundling reduces churn because a customer that buys a package of  
10 services must then compare competitors' offerings of multiple services before deciding  
11 to switch suppliers. In addition, by offering a selection of bundled services, a firm can  
12 more closely match the idiosyncratic preferences of individual customers than if it  
13 offered all services à la carte at constant prices. All of the major communications  
14 suppliers (ILECs, CLECs, wireless and cable companies) are increasingly emphasizing  
15 their packaged offerings, often explicitly for the purpose of reducing customer churn.  
16 See Exhibit I for examples of bundled offerings.

17 Industry analysts estimate that the reduction in churn from bundling services is  
18 significant. For example, while monthly churn rates for standalone local and long  
19 distance service are estimated to be 3.7 and 4.4 percent/month, respectively, when the  
20 services are bundled together the rate is 3.1 percent, a reduction of almost a quarter

1 from the average standalone rate<sup>1</sup>. Higher churn reductions are observed when more  
2 services are added to the bundle.

3 Q. What other factors could contribute to an increase in demand for hot cuts that would be  
4 expected in a post-UNE-P world?

5 A. The second component of the incremental demand for hot cuts would be the transition  
6 of the embedded base of CLEC UNE-P subscribers to UNE-L pursuant to the *Triennial*  
7 *Review Order*. We refer to this component of the incremental hot cut demand as  
8 “carrier-initiated” service changes, since it would be independent of consumer choice.  
9 (The consumer would purchase services from the same carrier as before and would  
10 essentially be unaware of the process or the change.) Subject to the requirements of the  
11 *Triennial Review Order* (see FCC Rule 319(d)(2)(iv)), it would be the carrier’s decision  
12 — not the end-user customer’s — when and how to migrate their customer onto the  
13 CLEC switch.

14 Q. Will the embedded-base conversion requirement give rise to a continuing increment of  
15 the hot cut demand that Verizon would be required to handle?

16 A. No. The *Triennial Review Order* requires that the conversion be completed within 27  
17 months from a state commission’s finding of non-impairment. Thus, the embedded  
18 base conversion would increase Verizon’s hot cut demand for only a limited period.  
19 The long term increase in hot cut demand would be due solely to customer-initiated  
20 changes in local service providers, as discussed above.

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<sup>1</sup> Jeff Halpern and Gil Luria , “RBOCs: Consumer Bundling Shifts from a Liability to an Asset,” Bernstein  
(continued...)

1 Q. How did you estimate the total number of UNE-P lines that will constitute the  
2 “embedded base” that will need to be migrated to UNE-L facilities pursuant to the  
3 *Triennial Review Order*?

4 A. The methodology, described in greater detail below in Section III, provides a  
5 conservative measure (in the sense explained above) of the incremental hot cut demand  
6 resulting from the embedded base conversion.

7 This is true because not all carriers will choose to provision all of their former UNE-P  
8 customers with UNE-L; some carriers may drop customers, migrate customers to resale,  
9 or — as suggested by a recent statement of AT&T<sup>2</sup> — may seek to negotiate a  
10 commercial arrangement for the purchase of a UNE-P-like service from Verizon at a  
11 market price, if and when Verizon chooses to offer such a service. Each of these  
12 alternatives will reduce the potential number of hot cuts below the current and projected  
13 future volume of UNE-P lines.

14 Q. Would the size of the embedded base be materially affected by the fact that CLECs  
15 would be permitted to continue ordering UNE-P for as long as five months after a  
16 finding of non-impairment by this Commission, pursuant to FCC Rule 319(d)(2)(iv)?

17 A. No. There is no evidence to suggest that CLEC UNE-P line growth over that period  
18 would be materially impacted by this fact. Although the 5-month period could lead

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(...continued)

Research Weekly Notes (August 9, 2002) (hereafter cited as “Halpern & Luria”).

<sup>2</sup> See “AT&T CEO Urges End of Civil War With Bells” (Reuters September 15, 2003) (“Chief Executive Dave Dorman argued that the four dominant local telephone carriers should stop fighting regulations that require them  
(continued...)”)



1 CLECs to offer discounts or special promotions to induce customers to switch to a  
2 UNE-P-based service with the expectation of migrating them to UNE-L as part of the  
3 conversion of the embedded base, there is no clear evidence that this two-step migration  
4 would be less expensive for the CLEC or less potentially disruptive for the customer.  
5 This suggests that CLECs would likely choose to place customers directly on UNE-L  
6 facilities once their own local switching arrangements are established. Indeed, the FCC  
7 suggested this, albeit in a slightly different context, in the *Triennial Review Order*:

8 "Once competitive carriers have incurred the fixed costs associated with  
9 deploying their own switching facilities to support one-third of their  
10 customers, we find it likely that such carriers will have an incentive to fill  
11 the capacity of their switch such that they will not necessarily need the full  
12 three years to complete the migration — assuming, of course, that the  
13 incumbents can successfully manage the cutover process." (*Triennial*  
14 *Review Order* ¶ 532 n.1630)

15 Q. How can the monthly hot cut demand due to conversion of the embedded base be  
16 determined based on the total size of that embedded base?

17 A. Under the rules promulgated pursuant to the *Triennial Review Order* (see FCC Rule  
18 319(d)(2)(iv)), CLECs must place orders to migrate 1/3 of the customers in the  
19 embedded base from UNE-P by 13 months from the date the Commission finds no  
20 impairment, half of the remainder (i.e., a second 1/3 of the customers comprising the  
21 embedded base) 20 months from that date, and all of the final remainder (i.e., the last  
22 1/3 of the customers) by 27 months from that date. The scheduling of the conversion is

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(...continued)

to share their networks at government-mandated wholesale prices, and instead should work out commercial contracts to provide access to promote competition.”).

1 to be determined by negotiation between Verizon and the CLEC, and the negotiated  
2 conversion plan is to be submitted to the Commission.

3 There is a great deal of “play in the joints” of this schedule. For example, a schedule  
4 could call for the conversion of all customers by the end of month 13 (or earlier) and  
5 still be consistent with the FCC’s requirements. Moreover, since the 1/3—1/3—1/3  
6 schedule applies to customers, not lines, even a uniform, pro-rata conversion schedule  
7 by customers could result in a schedule that is front- or back-loaded by lines.

8 For purposes of this analysis, we assume a uniform, pro-rata conversion (on an access  
9 line basis) of each 1/3 of the embedded customer base within the time made available  
10 for that conversion by the FCC’s rules. We also conservatively assume that the  
11 conversion of the first 1/3 of the base will begin not at the time of the non-impairment  
12 finding, but at the time of submission of the negotiated conversion plan to this  
13 Commission — i.e., two months from the Commission’s non-impairment determination  
14 (see FCC Rules 319(d)(2)(iv) & 319(d)(2)(iv)(B)). This means that the period available  
15 for the conversion of the first 1/3 will be 11 months instead of 13.

16 This assumption of a pro rata conversion is based on two considerations. First, CLECs  
17 have mixed incentives regarding front-loading or back-loading the conversions. As the  
18 FCC observed, the fact that the CLEC has already incurred the fixed cost of purchasing  
19 and installing its switch suggests an incentive to fill it to capacity as quickly as possible.  
20 On the other hand, the CLEC would benefit from postponing the incurrence of the non-  
21 recurring costs of collocation and hot cuts as long as possible. The assumption of  
22 uniform conversion is thus a reasonable middle ground. Second, and more important,

1 the detailed schedule is subject to negotiation and, implicitly, to some form of dispute  
2 resolution. This means that the CLECs' desires concerning front-loading or back-  
3 loading will not be dispositive, and that appropriate weight will be given to the  
4 operational advantages of a pro rata conversion, which would result in reducing  
5 Verizon's need to temporarily increase its work force to handle "peak loading."

6 **II. FACTORS AFFECTING HOT CUT DEMAND IN A POST UNE-P**  
7 **REGULATORY ENVIRONMENT**

8 **A. Incremental Demand Resulting from Customer-Initiated Changes in Service**  
9 **Providers**

10 Q. How would the volume of hot cuts that Verizon would be required to handle be affected  
11 if UNE-P were no longer available to CLECs?

12 A. Today, when a CLEC orders UNE-P service to migrate a Verizon retail customer to its  
13 own retail service, Verizon does not perform a hot cut. Nor is a hot cut required if a  
14 customer switches between UNE-P CLECs or from a UNE-P CLEC to Verizon. (A hot  
15 cut would be required, however, for a migration between a UNE-P CLEC and a UNE-L  
16 CLEC.) Nor is a hot cut required when a customer switches between Verizon and a  
17 CLEC providing resold Verizon service or between two CLECs providing resold  
18 Verizon service. Similarly, a hot cut is not required when a customer migrates between  
19 a resale-based and a UNE-P-based CLEC or when a CLEC changes its wholesale  
20 service to UNE-P from resale (or vice-versa). In all of those cases (i.e., all of the cases  
21 where a hot cut is not required), Verizon remains the switch provider.

22 Essentially, a hot cut (or reverse hot cut) needs be performed only if a customer's  
23 choice of service provider entails a change in the switch providing dial tone to the retail

1 customer. (To be precise, a switch change is a necessary but not sufficient condition for  
2 requiring a hot cut). A necessary and sufficient condition is that the transaction requires  
3 a change in the switch that provides dial tone but no change in the loop. A change in  
4 both the loop and switch that serves the customer — such as would be expected for  
5 migration to or from a facilities-based or intermodal service provider — requires (from  
6 the perspective of frame work and coordination) the same task as a new connection or  
7 disconnection — not a hot cut. Coordination is unnecessary because the loop and  
8 switch that will serve the customer can be provisioned while the old arrangement is still  
9 in place.)

10 If UNE-P were eliminated, however, CLECs would have to migrate to other forms of  
11 provisioning local service to their customers, and to the extent that they migrate to  
12 UNE-L (rather than switching to resale or fully-facilities-based provisioning), additional  
13 hot cuts would be required that were not required in a UNE-P world. Hot cuts would be  
14 required for retail-to-UNE-L migrations and for UNE-L-to-UNE-L migrations, and  
15 reverse hot cuts would be required for UNE-L to Verizon-retail migrations, since in  
16 each of these cases, the end user would be changing switch providers but not the loop  
17 provider (which would remain Verizon).

18 Q. Please describe the flow of hot cut requests that Verizon receives under the current  
19 rules, i.e., where UNE-P is an available competitive provisioning alternative.

20 A. Currently, the flow of hot cuts is equal to the flow of migrations involving UNE-L  
21 CLECs, excluding those winbacks that for operational reasons discussed above may  
22 have to be provisioned through disconnect/reconnect activity rather than hot cuts.

1 Volumes of hot cuts, therefore, depend to a large extent on customer “churn” — the  
2 fraction of customer lines that change local service suppliers in a given month. The  
3 number of hot cuts is not equal to customer churn, however, for three key reasons:

- 4 • Some Verizon retail customers move out of Verizon serving territory, or discontinue  
5 service for other reasons (death, non-payment, etc.).
- 6 • Some Verizon retail customers switch to providers of wireless service or cable  
7 telephony or voice-over-Internet services, or to other facilities-based CLECs.
- 8 • Some Verizon retail customers switch to CLEC UNE-P or CLEC resale services.

9 Each of these three types of migrations is counted as churn from Verizon retail service’s  
10 perspective, but none of them results in hot cuts.

11 Currently, the volume of hot cuts is approximately equal to the number of lines  
12 migrating from Verizon’s retail service to the retail service offered by a CLEC using  
13 UNE-L, plus the portion of the lines that Verizon wins back from a CLEC using UNE-L  
14 for which a reverse hot cut is required.

15 Q. Are there any other circumstances in which Verizon performs a hot cut under the  
16 current rules?

17 A. Yes. These relate to migration of customers from one CLEC to another and to changes  
18 in the way that a CLEC decides to provide service to its customers. However, in both  
19 cases, the volume of hot cut requests generated is likely to be small.

20 First, when a CLEC customer served by UNE-L migrates to another CLEC using  
21 UNE-L, Verizon must rearrange the access line from the collocation space of one CLEC  
22 to that of another.

1 Second, when a CLEC resale customer migrates to a CLEC (different or the same)  
2 using UNE-L, Verizon must perform a hot cut because the identity of the switch  
3 provider changes from Verizon to the CLEC.

4 Third, when a customer of a UNE-P CLEC migrates to a UNE-L CLEC (different or the  
5 same), Verizon must perform a hot cut.

6 Table 1 shows all customer migrations that generate hot cuts under the current rules  
7 (i.e., where UNE-P is available).

8 **Table 1**  
9 **Customer Migrations Generating Hot Cuts under Current Rules**

| <b>FROMTO</b>         | <b>Verizon Retail</b> | <b>CLEC FB</b> | <b>CLEC UNE-L</b> | <b>CLEC UNE-P</b> | <b>CLEC Resale</b> |
|-----------------------|-----------------------|----------------|-------------------|-------------------|--------------------|
| <b>Verizon Retail</b> |                       |                | <b>X</b>          |                   |                    |
| <b>CLEC FB</b>        |                       |                |                   |                   |                    |
| <b>CLEC UNE-L</b>     | <b>R</b>              |                | <b>X</b>          | <b>R</b>          | <b>R</b>           |
| <b>CLEC UNE-P</b>     |                       |                | <b>X</b>          |                   |                    |
| <b>CLEC Resale</b>    |                       |                | <b>X</b>          |                   |                    |

10  
11 Q. Please explain Table 1.

12 A. The table shows the Verizon work requirements for conversions from the provisioning  
13 alternatives shown in the row headings to the provisioning alternatives shown in the  
14 column headings. (Thus, the first cell in the row headed "CLEC UNE-L" relates to  
15 migrations from UNE-L CLECs (the row) to Verizon retail (the column).) "FB" refers  
16 to facilities-based provisioning, which, for purposes of this table, means a CLEC that  
17 utilizes its own loop and switch. An "X" indicates an ordinary hot cut and an "R"  
18 indicates a reverse hot cut.

1 The first thing that should be noted is that the table (considered as a matrix) is  
2 symmetric about its main diagonal (from upper-left to lower-right), except that the Rs  
3 and Xs reverse. Symmetry reflects the fact that some form of hot cut is required  
4 whenever the ownership of the switch supplying dial tone to the customer changes. The  
5 exchange of Rs and Xs across the main diagonal simply follows the change in switch  
6 ownership: changes to a Verizon switch represent reverse hot cuts while changes to a  
7 CLEC switch represent ordinary hot cuts.

8 Second, migrations from (or to) CLEC A's UNE-L service to (or from) CLEC B's  
9 UNE-P-based or resale-based service may be generated by a customer's decision to  
10 change carriers (so that CLEC B serves the customer and purchases UNE-P or resale) or  
11 by CLEC A's decision to change the method by which it serves its customer. In both  
12 cases, the hot cut in question is a reverse hot cut, in the sense that a loop that terminates  
13 (ultimately) on CLEC A's switch is effectively shifted to terminate on Verizon's switch.

14 Finally, migrations from CLEC UNE-L to CLEC UNE-L presumably involve a  
15 customer's decision to change suppliers. Such a change entails a change in the switch  
16 supplying dial tone to the customer and thus requires a hot cut if the same loop is used.

17 Q. Please describe the factors that will impact the volume of hot cuts that Verizon will  
18 likely perform if Verizon is no longer required to provide local switching on an  
19 unbundled basis.

20 A. If switching is eliminated as a UNE, CLECs would no longer be able to provision  
21 service using UNE-P, except to the extent that, as mentioned above, Verizon chooses to  
22 make a UNE-P-like service available at market-based rates and on a commercial basis.

1 Some CLECs would then likely provision service to some customers using UNE-L, so  
2 that Verizon would need to perform additional hot cuts, over and above the flow of hot  
3 cuts performed today under current rules. Table 2 illustrates the demand for hot cuts  
4 and reverse hot cuts assuming that all current UNE-P requests are treated instead as  
5 UNE-L requests. The organization of this Table and the abbreviations used are the  
6 same as for Table 1.

7 **Table 2**

8 **Customer Migrations Generating Hot Cuts in the Post-UNE-P Environment**

| <b>FROM/TO</b>        | <b>Verizon Retail</b> | <b>CLEC FB</b> | <b>CLEC UNE-L</b> | <b>CLEC UNE-P</b> | <b>CLEC Resale</b> |
|-----------------------|-----------------------|----------------|-------------------|-------------------|--------------------|
| <b>Verizon Retail</b> |                       |                | <b>X</b>          | <b>X</b>          |                    |
| <b>CLEC FB</b>        |                       |                |                   |                   |                    |
| <b>CLEC UNE-L</b>     | <b>R</b>              |                | <b>X</b>          | <b>X</b>          | <b>R</b>           |
| <b>CLEC UNE-P</b>     | <b>R</b>              |                | <b>X</b>          | <b>X</b>          | <b>R</b>           |
| <b>CLEC Resale</b>    |                       |                | <b>X</b>          | <b>X</b>          |                    |

9

10 Q. Please explain Table 2.

11 A. In this table, CLEC UNE-P denotes customers previously served by UNE-P that would  
12 be served by UNE-L in the new environment. Hence, the rows (and columns)  
13 associated with CLEC UNE-L and CLEC UNE-P are identical. The matrix exhibits the  
14 same symmetry as in the previous table for the same reasons.

15 Q. Based on these matrices, how can we calculate the additional demand for hot cuts that  
16 would be brought about by a decision to eliminate UNE-P as a competitive provisioning  
17 alternative?

18 A. The incremental demand for hot cuts would be the difference between the hot cuts  
19 performed under current rules (Table 1) and the hot cuts that would be performed if



1 switching were eliminated (Table 2). Thus, additional hot cut demand could be  
2 calculated simply by subtracting each entry in Table 1 from the corresponding entry in  
3 Table 2. This is done in Table 3, below.

4 **Table 3**

5 **Customer Migrations Generating Incremental Hot Cuts in the Post-UNE-P**  
6 **Environment**

| <b>FROM\TO</b>        | <b>Verizon Retail</b> | <b>CLEC FB</b> | <b>CLEC UNE-L</b> | <b>CLEC UNE-P</b> | <b>CLEC Resale</b> |
|-----------------------|-----------------------|----------------|-------------------|-------------------|--------------------|
| <b>Verizon Retail</b> |                       |                |                   | <b>X(1)</b>       |                    |
| <b>CLEC FB</b>        |                       |                |                   |                   |                    |
| <b>CLEC UNE-L</b>     |                       |                |                   | <b>X(2)</b>       |                    |
| <b>CLEC UNE-P</b>     | <b>R(1)</b>           |                | <b>X(2)</b>       | <b>X(3)</b>       | <b>R(4)</b>        |
| <b>CLEC Resale</b>    |                       |                |                   | <b>X(4)</b>       |                    |

7  
8 Q. Please explain Table 3.

9 A. This incremental hot cut matrix exhibits the same symmetry as the previous matrices:  
10 the difference between two symmetric matrices obviously must also be symmetric.  
11 Because the only difference we consider is the availability of UNE-P, the only entries in  
12 this matrix are in the UNE-P rows or columns. Thus, other types of frame work (e.g.,  
13 connects and disconnects) do not appear in Table 3, despite the fact that these types  
14 comprise the bulk of current frame work. While disconnects and connects are  
15 important, (i) they are not hot cuts and do not require the coordination of a hot cut and  
16 (ii) their volume is unchanged by the potential reclassification of UNE-P as UNE-L.  
17 They thus do not figure in our analysis of Verizon's incremental work requirements.

18 Q. What is meant by Categories (1) – (4) in Table 3?

1 A. These four categories of migrations identify all of the circumstances in which  
2 migrations can lead to incremental hot cuts.

3 Category 1: CLEC UNE-P from/to Verizon Retail: These migrations do not require a  
4 hot cut (ordinary or reverse) under the current regime because they involve no change in  
5 the ownership of the switch providing dial tone. In the post-UNE-P world, the  
6 migration may require a change in switch provider.

7 Category 2: CLEC UNE-P from/to CLEC UNE-L: Under the current regime, this  
8 migration requires either a hot cut or a reverse hot cut. In the current data, there are few  
9 transactions in these cells. However, in the future, the migration of the embedded base  
10 will obviously generate a large number of transactions in the CLEC UNE-P to CLEC  
11 UNE-L cell during the limited transitional period.

12 Category 3: CLEC UNE-P from/to CLEC UNE-P: Currently, customer migrations  
13 between CLECs using UNE-P do not require any form of hot cut. Post-UNE-P, they  
14 require a hot cut.

15 Category 4: CLEC resale from/to CLEC UNE-P: Under the current regime, these  
16 migrations do not require any form of hot cut because the Verizon switch is used in both  
17 cases. Post-UNE-P, a hot cut or reverse hot cut will be required, since the UNE-L  
18 customer will be served from the CLEC switch and the resale customer will be served  
19 from Verizon's switch.

20 Q. Quantitatively, how do the number of transactions in the numbered cells above  
21 compare?

1 A. The bulk of hot cut demand stemming from customer migration should occur in  
2 Category (1), for two reasons: the ILECs' market share in Florida — which is currently  
3 a majority of the market — implies that a large fraction of migrations should occur to  
4 and from the ILECs' retail service.<sup>3</sup> Also, the bulk of CLEC provisioning in Florida  
5 uses UNE-P and UNE-L, so that a large fraction of migrations should occur to and from  
6 a CLEC UNE-based service.<sup>4</sup>

7 Thus, the current distribution of local competition arrangements is disproportionately  
8 weighted towards Category (1) — migrations between Verizon's retail service and  
9 CLEC UNE-P and UNE-L services. If this distribution remains stable over time, we  
10 would expect future migrations to mirror the current distribution, and a large fraction of  
11 migrations will fall into Category (1).

12 This effect can be illustrated using publicly available, statewide data (i.e., the FCC data  
13 for Florida) to obtain an estimate of the number of incremental hot cuts that a given  
14 migration of customers would produce, on average, in Florida. We start with a base  
15 case in which the markets are stable and migration is uniform across customers, and we  
16 assume that the migrations are randomly distributed, in the sense that they do not  
17 depend on the type of service (UNE-L, UNE-P, resale, etc.) provided by their old or  
18 new service providers. In this case, if 1,000 Florida customer lines were to change

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<sup>3</sup> According to FCC data, as of December 2002 CLECs served approximately 13 percent of end user switched access lines in Florida. See *Local Telephone Competition Status as of December 31, 2002*, released June 2003, Table 7. These data are for all of Florida, the market share for Verizon Florida may differ from the average state-wide market share in the FCC report.

<sup>4</sup>*Id* at Table 10.

1 suppliers in a given time period, on average 874 of the migrations would be by ILEC  
2 customers and 126 would be by the customers of some CLEC.<sup>5</sup>

3 Of the 874 lines lost by the incumbent, 496 ( $0.568 \times 874$ ) would migrate to CLEC  
4 UNE-L and UNE-P. These 496 migrations would thus fall into Category (1) above.  
5 The remaining 378 lines would have no effect on incremental hot cuts because they  
6 would migrate to facilities-based CLECs ( $193 = 0.221 \times 874$ ) and resale-based CLECs  
7 ( $185 = 0.212 \times 874$ ).

8 Of the 126 migrations associated with CLEC customers, 126 would migrate to another  
9 CLEC or to the ILEC. Of the 126 CLEC migrators, approximately 72 ( $126 \times 0.568$ ) are  
10 initially served on UNEs, 28 ( $126 \times 0.221$ ) on a CLEC facilities basis and 27 ( $126 \times$   
11  $0.212$ ) on resale. Based on current market shares, 87 percent of each of these  
12 migrations would go to the ILEC. The remaining 13 percent would be distributed  
13 across the three "flavors" of CLEC service (UNE, facilities-based, and resale) in the  
14 current statewide proportions of 57, 22 and 21 percent respectively. The resulting  
15 classification of migrations is shown in Table 4.

16 **Table 4**

17 **Number of Migrations by Type**

| <b>FROM\TO</b>          | <b>Incumbent<br/>Retail</b> | <b>CLEC FB</b> | <b>CLEC UNE-P/<br/>UNE-L</b> | <b>CLEC<br/>Resale</b> | <b>Total</b> |
|-------------------------|-----------------------------|----------------|------------------------------|------------------------|--------------|
| <b>Incumbent Retail</b> |                             | <b>192.8</b>   | <b>496.4</b>                 | <b>185.2</b>           | <b>874.4</b> |
| <b>CLEC FB</b>          | <b>24.2</b>                 | <b>0.8</b>     | <b>2.0</b>                   | <b>0.7</b>             | <b>27.7</b>  |
| <b>CLEC UNE-P/L</b>     | <b>62.4</b>                 | <b>2.0</b>     | <b>5.1</b>                   | <b>1.9</b>             | <b>71.3</b>  |
| <b>CLEC Resale</b>      | <b>23.3</b>                 | <b>0.7</b>     | <b>1.9</b>                   | <b>0.7</b>             | <b>26.6</b>  |

18  
<sup>5</sup> Using the December, 2002 CLEC statewide share of access lines in Florida according to the most recent FCC  
(continued...)

1 Table 4 shows the expected migrations, by cells, stemming from a uniform migration of  
2 1,000 customer lines. Recall that Table 3 identifies the cells in which hot cuts (and  
3 reverse hot cuts) qualify as incremental hot cuts and places them in four categories.  
4 Adding together the migrations in Table 4 for the cells that comprise Category (1) in  
5 Table 3, for example, would give  $496.4 + 62.4 = 558.8$  migrations that would  
6 (ordinarily) produce hot cut requests. Noting that only about half the migrations that  
7 correspond to reverse hot cuts actually require hot cuts, we would add 496.4 to half of  
8 62.4 (31.2) to get 527.6 expected incremental hot cuts in Category (1). A similar  
9 calculation applies to Category (4). For the combined Categories (2) and (3), we  
10 observe in Table 4 only 5.1 migrations, which are the sum of two hot cut categories and  
11 two potential reverse hot cut categories. Assuming the flows between UNE-P and  
12 UNE-L to be symmetric, the 5.1 migrations would give rise to  $5.1 \times .75$ , or 3.8 hot cuts  
13 and reverse hot cuts.

14 Putting these calculations together in Table 5, we observe that in the current market in  
15 Florida (and assuming a stable market and uniform customer migration), a customer  
16 migration has only about a 53 percent chance of leading to a direct or reverse hot cut.  
17 Moreover, only a portion of those migration-related hot cuts would be incremental to  
18 current hot cut volumes. This portion can be determined by multiplying the total

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(...continued)

Local Competition Report.

1 migration-related hot cuts by the percentage of the unbundled loops in Florida that are  
2 part of a UNE-P arrangement (i.e., that are not being provided as UNE-L).<sup>6</sup>

3 **[BEGIN VERIZON PROPRIETARY]**

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5  
6  
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8  
9  
10  
11  
12 **[END VERIZON PROPRIETARY]**

13 Q. How should Table IV-5 be interpreted?

14 A. Several aspects of Table IV-5 are important. First, only 567.6 of our 1000 migrations  
15 fall into categories that correspond to incremental hot cuts. For completeness, note that  
16 the remaining migrations consist of 223.2 lines to and from CLEC facilities-based  
17 suppliers and 209 lines between incumbent retail and CLEC resale. None of these  
18 approximately 432.4 migrations generates hot cuts today or incremental hot cuts in a  
19 post-UNE-P environment.

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<sup>6</sup> FCC data from the Local Competition Report do not separate UNE-P and UNE-L lines. Thus, we use the actual proportion of UNE-P and UNE-L lines from Verizon Florida data for December 2002.

1 Second, nearly all hot cuts produced by customer migration are in Category (1). At  
2 current levels of CLEC market penetration, migrations between CLECs (Categories (2)  
3 – (4)) are quantitatively unimportant. Note however, that our method of measuring  
4 incremental hot cut demand — adding the current flow of UNE-P requests to the current  
5 flow of winbacks that give rise to reverse hot cuts — includes all four categories.

6 Q. This base case assumes that market shares remain constant, so that lines migrate to  
7 incumbents and CLECs in the same proportion as their current market shares. How  
8 would the results in Table 5 change if CLEC market shares increased, so that lines  
9 migrate more-than-proportionately to CLEC suppliers?

10 A. The results are not sensitive to that assumption. If, for example, customers were twice  
11 as likely to migrate to a CLEC as indicated by the current CLEC market share, the  
12 percentage of migrations resulting in a hot cut would increase from 53.5 to 53.8 percent.  
13 At the extremes, if no customers migrated to the incumbent, the hot cut percentage  
14 would rise to 55.5 percent. If no customers migrated to CLECs, the hot cut percentage  
15 would fall to 53.2 percent.

16 Q. This base case assumes that customer migration is uniformly distributed among  
17 incumbent and CLEC customers. How would the results in Table 5 change if CLEC  
18 customers were more inclined to migrate than the incumbent's customers?

19 A. This assumption is also not critical. If CLEC customers were twice as likely to migrate  
20 as incumbent customers, the hot cut percentage would fall from 53.5 to 50.2 percent. If  
21 no incumbent customers ever chose to migrate, only 30.6 percent of migrations would

1 entail a hot cut. At the other extreme, if CLEC customers never migrated, the hot cut  
2 percentage would rise to only 56.8 percent.

3 Q. How would you interpret these results?

4 A. This exercise answers two questions. First, some CLECs have argued that without  
5 UNE-P, the incidence of hot cuts should be similar to the history of inter- and/or  
6 intraLATA PIC changes in the toll market. In both cases, the argument goes, a  
7 consumer's choice to change suppliers results in a change in the network configuration:  
8 for toll, a software change to redirect 1+ calls and for local exchange service; for local,  
9 a hot cut to shift the loop from one carrier's switch to another's. The numbers in Table  
10 5 show that this argument is wrong, because when a local exchange customer changes  
11 carriers, a hot cut is not necessarily required. In fact, a local exchange customer  
12 migration involves a hot cut only about 53 percent of the time.

13 Second, for forecasting the demand for incremental hot cut requests, these results show  
14 that the number of incremental hot cuts in a post-UNE-P environment can be  
15 conservatively approximated by the number of UNE-P migrations and winbacks in a  
16 steady-state, mature market. The likely incremental hot cut requests from categories  
17 (2)-(4) are insignificant. We note, however, that our data for UNE-P migration captures  
18 elements of (2) – (4) in the sense that the data include all migrations to UNE-P, i.e.,  
19 from Verizon and from UNE-L, UNE-P and resale.

20 Third, the results show that the volume of *incremental* hot cuts associated with 1000  
21 migrations is expected to be quite small [BEGIN VERIZON PROPRIETARY]



1 [END VERIZON PROPRIETARY]. This result is due to the comparatively large  
2 proportion of Verizon Florida UNE-L CLEC lines as of September 2003.

3 Q. You have discussed ways of assessing the incremental hot cut demand that would result  
4 from the elimination of UNE-P and its replacement by UNE-L. Would Verizon have to  
5 provision this level of demand on the first day of the post-UNE-P environment (i.e.,  
6 immediately after a Commission determination of non-impairment)?

7 A. No. A portion of the incremental hot cuts stemming from customer migration will  
8 increase over the period during which the embedded base of UNE-P lines is converted  
9 to UNE-L. For winback customers (i.e., customers migrating from CLEC to Verizon  
10 retail service), a hot cut occurs only when the customer migrates from UNE-L service.  
11 As the embedded base is converted from UNE-P to UNE-L, a larger proportion of  
12 CLEC-to-Verizon migrations will require a hot cut, and it is only after the embedded  
13 base is fully converted that winback migrations will generate the full amount of  
14 incremental hot cuts that we have calculated. In addition, even after the embedded base  
15 is fully converted, winbacks can be expected to increase if the volume of UNE-L lines  
16 continues to increase. In the next section, we calculate the rates at which the embedded  
17 base of CLEC UNE-P lines will be converted to UNE-L, and that information, coupled  
18 with the growth in the volume of incremental UNE-L lines, will be used to estimate the  
19 time path of winback migrations and the associated volume of incremental hot cuts.

20 Q. For the five months following a non-impairment determination, in which CLECs may  
21 continue to purchase UNE-Ps, what would be your estimate of incremental hot cuts  
22 stemming from customer migration?

1 A. Zero. Assuming CLECs continue to purchase UNE-Ps and UNE-Ls at their historical  
2 rates, no incremental hot cuts will be required from customer migration (hot cuts will be  
3 required from conversion of the embedded base beginning in month3). That is, we  
4 assume that during the first five months, CLECs acquiring new customers will continue  
5 to purchase UNE-Ps at their historical level, and we do not start the process of  
6 substituting UNE-Ls for UNE-Ps for these lines until after the five-month grace period  
7 has expired.

8 **B. Conversion of the Embedded Base of UNE-P Customers**

9 Q. You have previously discussed the regulatory requirements and practical considerations  
10 that will affect the facilities migrations resulting from the conversion of the embedded  
11 base of UNE-P lines. Based on that discussion, what is a reasonable assumption to  
12 make regarding the timing of the conversion of the embedded base to alternative service  
13 arrangements and, more importantly, to the flow of hot cuts that Verizon will be  
14 required to undertake as a result of that conversion?

15 A. As discussed above, it is reasonable to assume that the conversion of the embedded base  
16 will be uniformly distributed within each of the three periods specified in the *Triennial*  
17 *Review Order*. Thus, if we use  $x$  to represent the embedded base of customers, then a  
18 formula for the number of monthly conversions for the first 11 months following the  
19 submission of a conversion plan would be  $(x/3)/11$ , or  $x/33$ ; the formula for the number  
20 of monthly conversions for the second (7-month) portion of the conversion period is  
21  $(x/3)/7$ , or  $x/21$ , and the same  $x/21$  will be converted per month during the last 7-month  
22 period.

1 **C. Post-UNE-P Incremental Hot Cuts**

2 Q. Based on these analyses, what would be a conservative estimate of the flow of  
3 incremental hot cuts required in a post-UNE-P environment?

4 A. A conservative estimate of the monthly flow of incremental hot cuts required in a post-  
5 UNE-P environment during the conversion period would be (1) a forecast of the flow of  
6 UNE-P migrations, (2) winbacks from UNE-P transactions and (3) those required for a  
7 uniform conversion of the embedded base within each of the three periods specified by  
8 the FCC.<sup>7</sup> As described above, the winback transactions requiring a hot cut would ramp  
9 up over the embedded base conversion period, reaching its full level of estimated  
10 incremental hot cuts at the end of the period. After the 27-month embedded base  
11 conversion period, the third component of incremental hot cut demand would be  
12 eliminated. For the reasons discussed below, I believe that the actual volume of hot  
13 cuts likely to be performed by Verizon will be much lower than the numbers presented  
14 in this testimony.

15 Q. Please explain why the estimate presented here for incremental hot cuts required in a  
16 post-UNE-P environment — UNE-P migrations, winback transactions, and a uniform  
17 conversion of the embedded base — is a conservative estimate of future hot cuts in the  
18 post-UNE-P environment.

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<sup>7</sup> Technically, there is one component of incremental hot cuts excluded from UNE-P migrations and winbacks from UNE-P. A customer migration from UNE-P to resale in the future will require a hot cut, and these transactions are not included in current volumes of UNE-P migrations (which measure migrations to UNE-P from all sources) or winbacks from UNE-P (which measure migrations from UNE-P to Verizon). However, for reasons discussed in Table 4 and 5 above, these migrations are likely to be insignificant.

1 A. First, the proliferation of bundling as a strategy used by wireline, wireless and cable  
2 providers means that churn rates are likely to be lower because consumers are less  
3 likely to switch from a bundle of services to another supplier's bundle of services than  
4 from a single service to a competitor's single service offering.

5 Second, the analysis does not take into account the likely proliferation of customer  
6 migrations to alternative networks such as wireless, cable, telephony and Internet  
7 telephony. Therefore, even if churn were to remain constant during the relevant time  
8 period, there would still be a decrease in the demand for hot cuts because  
9 proportionately more customers would be migrating to alternative suppliers rather than  
10 to suppliers who use UNE-L.

11 Third, our analysis conservatively assumes all CLECs that were previously using  
12 UNE-P will now use UNE-L, even though there are other options available to the CLEC  
13 such as facilities provision or resale.

14 Finally, FCC rules require that impairment determinations for mass market switching be  
15 made on a market-area-by-market-area basis. To the extent that Verizon requests or  
16 receives relief in less than its entire Florida service area, those methods will  
17 underestimate the required volume of incremental hot cuts.

18 Q. Please explain your earlier statement that bundling will lead to reduced churn.

19 A. Recently, companies have begun aggressively to market bundled packages of  
20 telecommunications services, and according to company officials and telecom experts,  
21 this packaging strategy has the effect of reducing customer churn. The current data

1 regarding the incidence of UNE-P migration and winback does not fully take this  
2 phenomenon into account.

3 All else equal, bundled packaging of telecommunications services (or any services for  
4 that matter) tends to make consumers less likely to change providers compared to when  
5 customers purchase non-bundled services. Transactions costs of switching suppliers are  
6 lower with stand-alone service offerings since all that matters is quality and price for a  
7 single service. Customers purchasing a bundle of services would need to compare  
8 competitors' offering of multiple services before deciding to switch suppliers, and this  
9 would make the customer less likely to switch from the bundled service. Bundling can  
10 extend the effects of a customer's preference for one service of a particular supplier to  
11 other services of that supplier. For example, a customer of AT&T Complete Choice is  
12 less likely to switch from AT&T than a Verizon local exchange customer who uses  
13 AT&T long distance.

14 Q. Is there evidence to support the proposition that offering bundled services makes  
15 customers less likely to switch providers?

16 A. Yes, there is evidence in the trade press that one of the reasons why companies are  
17 moving to bundled offerings is to reduce customer churn. For example, according to  
18 Mark Johnson, director of marketing for Z-Tel Communications, a large CLEC:

19 Everyone is trying to offer bundles of services...The more services a  
20 customer gets from a particular carrier, the harder it is for that customer to  
21 leave.<sup>8</sup>

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<sup>8</sup> Michael Braga, "Bundles of problems besets long-distance," *St. Petersburg Times*, July 5, 2000.

1 According to an article in the New York Times, managers believe that customers who  
2 buy packages are more loyal.<sup>9</sup> For example, according to an AT&T spokesperson:

3 It's human nature...People have less desire to move away from you if you  
4 have all their business.<sup>10</sup>

5 While estimates of the impact that bundling has and will have on customer churn vary,  
6 the general conclusion is that bundling will significantly reduce customer churn.

7 According to AT&T:

8 AT&T executives, meanwhile, say 'bundled services are 20 to 30 percent  
9 stickier than standalone long distance accounts.' In fact, customers who  
10 buy a bundled product are 'two to eight times more likely to buy  
11 additional products,' compared to customers who only buy long  
12 distance.<sup>11</sup>

13 AT&T states that in single-family AT&T homes with only video services, churn runs  
14 are more than 2% a month but when the home purchases 2 and 3 products the churn  
15 rates fall to 1.59% and 1.2%, a drop of 20 and 40 percent, respectively.<sup>12</sup>

16 Similarly, according to Sprint, its customer churn fell 20 percent for bundled customers  
17 and that during the first 60 days of a new account, the churn rate of bundled customers  
18 is half that of customers buying just one service.<sup>13</sup>

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<sup>9</sup> Nicholas Thompson, "Phone Companies See Their Future in Flat-Rate Plans of Many Services," *The New York Times*, May 23, 2003.

<sup>10</sup> *Id.*

<sup>11</sup> Gary Kim, "All You Can Eat: Competitive providers are seeing their fill of small business bundles," <http://www.fatpipeonline.com/archives/july2003buffet.asp>

<sup>12</sup> K.C. Neel, "The Book on Bundling," *CableWorld*, July 15, 2002.

<sup>13</sup> Jessica Hall, "Telecom companies find success in lighter 'bundles'", *Reuters News*, January 12, 2001.

1 These numbers are fairly consistent with churn forecasts published by Bernstein  
2 Research.<sup>14</sup> In a recent report, Bernstein Research published forecasts for 2003 of  
3 monthly churn rates for stand-alone local, long distance, mobile, broadband and video  
4 and for these services provided as a bundle. The average churn rate for the stand-alone  
5 services was approximately 3.0%. However, when these services are purchased as a  
6 bundle, Bernstein Research estimates the churn rate to be only 0.4%.

7 Q. Please explain why the existence of alternatives to the telephony wireline network (such  
8 as Internet telephony) would likely impact the demand for hot cuts?

9 A. The existence and growth of alternatives to the telephony wireline network reduces the  
10 demand for hot cuts because for any given number of customers migrating from  
11 Verizon, a greater proportion would migrate to suppliers that do not require the use of  
12 UNE-L and, therefore, do not require a hot cut. For example, assume that today for  
13 every 10 customers that migrate from Verizon, six (60%) go to a CLEC that uses  
14 UNE-L and thus require hot cuts, three (30%) go to a facilities-based or resale CLEC  
15 and only one (10%) goes to an alternative network. If the proportion of customers  
16 migrating from Verizon to an alternative network increases to 30%, then for the same  
17 10 migrations, there would be as many as 2 (20 percent) fewer hot cuts.

18 The analysis presented above for incremental hot cut demand does not take into account  
19 the trend of local exchange customers migrating from wireline suppliers to alternative  
20 networks such as wireless, cable telephony, and Internet telephony. This reduces the

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<sup>14</sup> See Halpern & Luria, *supra* note 1, at 8.

1 demand for hot cuts by reducing the proportion of customers that migrate from Verizon  
2 to CLECs, so that even if customer churn were to remain constant in the future, there  
3 would still be a decrease in the demand for hot cuts because proportionally more  
4 customers would be migrating to alternative suppliers rather than to suppliers who use  
5 UNE-L.

6 Q. Is the proportion of customer migrations from Verizon to alternative networks likely to  
7 increase in the future?

8 A. Yes. There is evidence that the pace of migration from traditional wireline telephony  
9 networks to alternative networks such as cable telephony, wireless, and Internet  
10 telephony will likely accelerate in the future. According to the FCC:

11 Verizon, SBC, and BellSouth saw business and consumer access lines fall  
12 3.6, 4.1, and 3.2 percent, respectively, in 2002, for a total decrease of 5.5  
13 million lines, with wireless substitution being a significant factor.<sup>15</sup>

14 And not all the reductions in access lines were due to reductions in second lines.  
15 According to Forbes, in 2001 as many as three million customers decided to forgo a  
16 home phone, going wireless instead.<sup>16</sup> According to the FCC, the number of wireless  
17 subscribers in Florida increased 16 percent between December 2001 and December  
18 2002 and has more than doubled since December 1999,<sup>17</sup> and, according to the Florida

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<sup>15</sup> Federal Communications Commission, "8<sup>th</sup> Annual CMRS Competition Report" (rel. July 14, 2003) ("CMRS Report").

<sup>16</sup> Scott Woolley, "Bad Connection," *Forbes.com*, August 8, 2002.

<sup>17</sup> CMRS Report, Table 13.



1 Public Service Commission Staff, has increased by 15.8 percent between 2002 and  
2 March 2003.<sup>18</sup>

3 Cable telephony is proliferating as well. The same Forbes article states that:

4 Still worse for the Bells than cord-cutting is losing customers to the cable  
5 companies. About 1.7 million Americans now get their phone service  
6 over cable lines...In the few markets where cable has been around for over  
7 two years, about 20% to 25% of homes tend to sign up, say AT&T.<sup>19</sup>

8 And a report less than one year later put the number of cable telephony customers at 3  
9 million as of December 2002, almost double the 1.7 million figure in 2001.<sup>20</sup> Given  
10 that cable telephony service is generally in its infancy, these figures are likely to  
11 increase significantly in the future, thus impacting the proportion of migrations that  
12 requires a hot cut.

13 Q. Why is it conservative to assume that all CLECs currently utilizing UNE-P would  
14 switch to UNE-L if Verizon's obligation to provide "mass market" local switching on  
15 an unbundled basis were eliminated?

16 A. The estimate for incremental hot cuts discussed above assumed that all CLECs that  
17 were previously using UNE-P will now use UNE-L, even though there are other options  
18 available to the CLEC, such as providing its own switches and loops or reselling  
19 Verizon's retail services. If CLECs choose to use these other options, there would be  
20 no hot cut performed. While it is difficult to forecast exactly how the CLECs will

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<sup>18</sup> Florida Public Utilities Commission, "The Status of Telecommunications Competition in Florida," October 31, 2003, at 7.

<sup>19</sup> *Id.*

1 provision service in the post-UNE-P environment, it is certainly a conservative  
2 assumption for purposes of estimating incremental hot cuts to assume that all UNE-Ps  
3 will be provisioned through UNE-L in the future.

4 Q. How do the FCC rules relating to state-commission impairment determinations for  
5 mass-market local switching affect the analysis of incremental hot cuts?

6 A. In the “nine month” proceedings authorized under the Triennial Review Order, non-  
7 impairment determinations relating to mass-market local switching are to be made on a  
8 market-area-by-market-area basis, with the precise market areas to be determined by the  
9 state commission, subject to the constraint that the market area may not be the entire  
10 state. Although precise market areas for purposes of the mass-market local switching  
11 analysis have not yet been adopted by the Commission, ILECs may pursue local  
12 switching relief only in certain geographic subsets of their territory, and, of course, the  
13 Commission may ultimately make non-impairment determinations in some market areas  
14 but not others. If local switching relief is sought or granted in a portion of the Verizon  
15 Florida serving area, my analysis of incremental hot cut activity would be conservative  
16 in that my analysis assumes that UNE-P would become unavailable in the entire  
17 Verizon footprint.

### 18 **III. DATA ANALYSIS**

19 Q. What data were used in your forecast of the volume of incremental hot cuts?

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(...continued)

<sup>20</sup> Forbes.com, [http://www.forbes.com/forbes/2002/0812084\\_pring.html](http://www.forbes.com/forbes/2002/0812084_pring.html). CBS MarketWatch.com, “Baby Bell Rivals Win More Local Users,” June 12, 2003

1 A. Verizon FL data on various types of customer migrations were the primary source of  
2 data used in the analysis. A description of the input data that was utilized is provided in  
3 Exhibit II.

4 Q. What is the volume of incremental hot cuts that you believe Verizon FL should be  
5 prepared to handle on a monthly basis if CLECs are denied access to mass-market  
6 unbundled local switching?

7 A. As discussed previously in the testimony, a conservative estimate of the incremental  
8 number of hot cuts and winbacks during the conversion period consists of (i) a forecast  
9 of the flow of UNE-P migrations, (ii) an estimate of the winbacks from UNE-P and (iii)  
10 the transactions that will result from the conversion of the embedded base. After the  
11 conversion period, item (iii) goes away and the incremental hot cuts consist of items (i)  
12 and (ii) only. Exhibit III provides a summary of the incremental hot cuts required over  
13 the conversion period.

14 Q. Please describe how you calculated the flow of UNE-P migrations.

15 A. I began by examining the UNE-P migration data from January 2002 to the present. As  
16 shown in Exhibit IV, migrations during 2002 were relatively few and fairly constant.  
17 UNE-P migrations seem to pick up after 2002. In December 2002, the Florida  
18 Commission ordered reductions in UNE-P prices, and I therefore used December 2002  
19 as the beginning point of active UNE-P competition in the Verizon Florida territories.<sup>21</sup>

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<sup>21</sup> Verizon Florida appealed the Commission's decision, which has been stayed pending resolution.

1 Q. Do you consider the most recent level of UNE-P migration as indicative of what to  
2 expect over the next few years?

3 A. No. I consider the recent levels of UNE-P migration as similar to the levels experienced  
4 when a new product enters the marketplace. When products are first introduced, there  
5 are relatively few buyers, and time must pass before demand levels reflect those of a  
6 mature market in a steady state. In general, the life cycle of products resembles an S-  
7 shape logit curve where, initially, demand is low and growing slowly, followed by a  
8 period of rapid growth. After this phase, demand levels reach an asymptote, remaining  
9 relatively constant for some period of time, followed possibly by a period of negative  
10 growth and decay. An examination of the UNE-P migration data leads me to conclude  
11 that the Verizon Florida market has not yet reached a steady state. Thus, I would  
12 expect increases in the future from the current level of UNE-P migrations.

13 Q. Can you forecast the steady state rate of UNE-P migration?

14 A. Yes, it is possible to forecast the steady-state rate of UNE-P migration from experience  
15 in other mature markets. One cannot reliably forecast this steady-state rate from current  
16 data in Florida because it makes little sense to forecast the upper limit of an S-shaped  
17 curve from a few data points at the bottom of the curve. Thus, it is necessary to have  
18 some external evidence regarding the likely demand level experienced in a similar but  
19 mature market, and we can use UNE-P migration data from other more mature markets  
20 to infer the height of the S curve. If we know (i) the current level of UNE-P migrations,  
21 (ii) the steady state rate of UNE-P migrations and (iii) the length of time necessary for  
22 the market to reach the steady state, we can forecast the intermediate monthly UNE-P

1 migration values, (i.e., monthly values can be estimated from the most recent period to  
2 the date of the mature market after which UNE-P migrations remain roughly constant.)

3 Q. What is a reasonable estimate of the steady-state rate of UNE-P migration?

4 A. In a recent proceeding in New York on behalf of Verizon, I determined that in that  
5 mature UNE-P market, one could expect monthly UNE-P migrations to average  
6 approximately [BEGIN VERIZON PROPRIETARY] [END VERIZON  
7 PROPRIETARY] of total retail lines. As the steady state of UNE-P migrations in the  
8 Verizon New York territory was reached approximately during the 2002-2003 period, I  
9 would estimate that it took about two years after long distance competition was  
10 authorized and CLEC entry accelerated for the steady state to be reached in New York.

11 Of course, applying this assumption to other markets and other geographic areas entails  
12 a significant approximation. The serving territories of Verizon New York and Verizon  
13 Florida are different in many respects, so that the steady-state rate of UNE-P migration  
14 might be very different in the two states. However, I would expect the steady state rate  
15 of UNE-P migration to be higher, if anything, in New York than in Florida, so applying  
16 this assumption would tend to over-forecast future UNE-P migration and future  
17 demand for hot cuts in Florida.

18 Similarly, the time from the beginning of UNE-based competition to the steady state  
19 will differ across states. In New York, it took two years after Section 271 authority was  
20 granted (the point at which CLEC entry accelerated) for the steady state to be reached.  
21 In Florida, UNE-P migration has accelerated throughout 2003, and I assume  
22 conservatively (in the sense that the assumption results in higher forecast migrations

1 earlier than would otherwise be the case) that the steady state will be reached two years  
2 from the start of competition, i.e., December 2004. That is, assuming UNE-P  
3 competition began in the Verizon FL territories approximately in December 2002, I  
4 would expect migration to reach a steady state at about [BEGIN VERIZON  
5 PROPRIETARY] [END VERIZON PROPRIETARY] percent of retail lines in  
6 about December 2004. Assuming conservatively that the number of retail lines remains  
7 constant during this period, this method estimates a steady state of approximately  
8 [BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] UNE-P  
9 migrations per month by December 2004.

10 Q. How do you determine the monthly change in UNE-P migration from the most recent  
11 period available (September 2003) to December 2004?

12 A. I calculate the monthly growth rate required to grow the current level of UNE-P  
13 migration in September 2003 [BEGIN VERIZON PROPRIETARY] [END  
14 VERIZON PROPRIETARY] to the steady state level of approximately [BEGIN  
15 VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] in December  
16 2004. This monthly growth rate is [BEGIN VERIZON PROPRIETARY] [END  
17 VERIZON PROPRIETARY]. I then grow the current level of UNE-P migration by  
18 [BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] on a  
19 monthly basis.

20 Q. Are there any additional reasons why your estimate of UNE-P migration over the next  
21 several years is likely to overestimate the actual amounts?

1 A. Yes. While it is necessary to use information from Verizon NY territories to estimate  
2 the steady state in the Verizon FL territories, these two markets are different and it is  
3 likely that the steady state in the two markets will differ. The demographic  
4 characteristics of New York are likely to attract more competition, on average, than in  
5 Verizon's Florida service area, and this effect would reduce the steady-state proportion  
6 of retail lines that would migrate to competitors in a given month.

7 Q. Please explain how you forecasted winbacks.

8 A. Several steps were required to forecast winbacks. Winbacks that give rise to  
9 incremental hot cuts are those winbacks originating from UNE-P lines. Verizon does  
10 not collect data in this manner. However, Verizon did provide winback orders (not  
11 lines) originating from UNE-Ls: see Exhibit V. For each month, I converted the UNE-  
12 L winback orders to lines based on the ratio of UNE-L lines to UNE-L orders (which  
13 averaged [BEGIN VERIZON PROPRIETARY] [END VERIZON  
14 PROPRIETARY] during the January 2002-September 2003 time frame). For each  
15 month, I then determined UNE-L winbacks as a proportion of UNE-L lines in service  
16 (which average [BEGIN VERIZON PROPRIETARY] [END VERIZON  
17 PROPRIETARY] percent) and multiplied that proportion by the number of UNE-P  
18 lines in service to determine winbacks originating from UNE-P. This provided me with  
19 a series of winbacks from UNE-P from January 2002 to September 2003.

20 Next, I examined the average value of winbacks from UNE-P as a proportion of total  
21 UNE-P lines in service for different time periods during January 2002 to September  
22 2003 and observed that this average has been decreasing in recent months. Therefore, I

1 used the average value of winbacks from UNE-P as a proportion of total UNE-P lines in  
2 service for the recent twelve-month period [BEGIN VERIZON PROPRIETARY]  
3 [END VERIZON PROPRIETARY] to be conservative and used this figure to forecast  
4 winbacks.

5 Specifically, I assume that monthly winbacks during the conversion period and beyond  
6 are proportional to the volume of incremental UNE-L lines, i.e., equal to [BEGIN  
7 VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] percent of the  
8 incremental UNE-L lines added as a result of the elimination of the switching element.  
9 Specifically, the number of incremental UNE-Ls consists of (1) the monthly conversion  
10 of the embedded base of UNE-P and (2) the net additions to the monthly volume of  
11 UNE-Ps.

12 Q. How did you forecast the embedded base?

13 A. I began with the most recent number for the embedded base, approximately [BEGIN  
14 VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] and grew the  
15 embedded base by changes in UNE-P migrations, winbacks and disconnects.  
16 Specifically, rather than forecast the embedded base, I calculated the embedded base in  
17 a given month  $t$  as equal to the embedded base in month  $t-1$ , plus UNE-P migrations in  
18 month  $t$ , minus winbacks from UNE-P in month  $t$ , minus disconnects in month  $t$ , see



1 Exhibit VI.<sup>22</sup> As described above, this approach is likely to be an upper bound on the  
2 volume of UNE-P embedded base over the forecasted period.

3 Q. What is the volume of incremental hot cuts that Verizon FL should be prepared to  
4 handle as a result of converting the embedded base?

5 A. I assume that the Commission will render a decision in July 2004 so that the starting  
6 point for conversion of the embedded base is July 2004. Based on my methodology for  
7 growing the embedded base, I forecast the embedded base to increase from [BEGIN  
8 VERIZON PROPRIETARY] [END VERIZON PROPRIETARY] in September  
9 2003 to [BEGIN VERIZON PROPRIETARY] [END VERIZON PROPRIETARY]  
10 in July 2004. I also assume that the conversion process will not begin until two months  
11 after July 2004. An analysis of incremental hot cut volumes resulting from the  
12 conversion of the embedded base is presented in Exhibit VII.

13 Q. How does the fact that CLECs will be able to purchase UNE-Ps for five additional  
14 months after July 2004 affect your analysis?

15 A. The analysis accounts for this fact by allowing the embedded base for the first five  
16 months to continue to grow by the same forecasted method mentioned above and in  
17 Exhibit VI. At the same time, lines are being converted beginning in month 3; therefore,  
18 these converted lines are subtracted from the still growing embedded base. December

---

<sup>22</sup> For disconnects, I assume that roughly 1-2 percent of lines in service in any given month disconnect due to factors other than migration such as mobility, non-payment of service or death. Long-term demographic statistics for the U.S. show that households move on average every five years, amounting to a 20 percent annual disconnect rate for moves.

1 2004 is the last month that CLECs will be able to order UNE-Ps assuming that the  
2 Commission's decision is effective as of July 2004.

3 Q. Will the embedded base also decrease due to winbacks?

4 A. Yes. During the conversion process, we assume that Verizon will continue to win back  
5 customers at the historical monthly rate, as described above. Therefore, during the  
6 conversion period, the embedded base is being reduced due to the conversion process  
7 and due to Verizon winbacks.

8 Q. Given your forecasts for the incremental hot cuts required if the Commission finds that  
9 CLECs are not impaired without access to Verizon FL's local switching unbundled  
10 element, is it likely that Verizon FL will be able to hire the additional people required?

11 A. Yes, current economic conditions suggest that work force expansion would not be  
12 difficult. First, a sufficient number of potential employees are clearly available.  
13 Because of force reductions in the telecommunications industry over the last several  
14 years, there is a large pool of experienced workers available to fill incremental staffing  
15 needs. Indeed, because the qualifications for these positions are relatively modest,  
16 Verizon would not be limited to hiring experienced telecommunications workers. An  
17 analysis of current unemployment statistics for Florida shows evidence that qualified  
18 job seekers are available in numbers far exceeding those that would be required by  
19 Verizon. Florida State unemployment across all industry segments has risen from about

1 297,000 in September 2000 to 439,000 in September 2003.<sup>23</sup> Thus, there are 142,000  
2 more people seeking work today in Florida than there were at the end of the telecom  
3 boom in 2000.

4 Second, the well-publicized meltdown in the global telecommunications industry has  
5 resulted in massive layoffs and force reductions. Until recently, the *Financial Times*  
6 maintained a website tracking announcements of layoffs by major communications  
7 employers. According to this compendium, between July 2000 and May 2002, the  
8 global telecom sector cut approximately 539,000 jobs.<sup>24</sup> In the U.S., as of May 2002,  
9 Qwest, BellSouth and Verizon had announced job cuts of 13,000, 4,200 and 7,500  
10 respectively. In September 2002, SBC announced a reduction of 11,000 jobs, in  
11 addition to the 10,000 jobs eliminated in the first three quarters of 2002.<sup>25</sup> AT&T's  
12 announced layoffs amounted to 10,000 jobs by May 2002. Earlier this month, Verizon  
13 announced a force reduction amounting to over 21,000 employees and about 10 percent  
14 of its work force, many of these likely residing in the metropolitan area.

15 Third, FCC data on U.S. telephone employment also shows a dramatic reduction,  
16 continuing into 2003. Based on preliminary data through March 2003, total  
17 employment has fallen by about 160,000 jobs from its peak in 2001. See Exhibit VIII.

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<sup>23</sup>My Florida. Local Area Unemployment Statistics (Seasonally Unadjusted).  
<http://www.labormarketinfo.com/laus/laus.htm>

<sup>24</sup> See <http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT3MOCS3OPC>, the FT.com Telecoms job cuts watch, last updated May 14, 2002. This figure includes telecom operators, cable operators and network equipment providers, categories that have been particularly hard hit.

<sup>25</sup> "SBC to Cut 11,000 Jobs and Investment Due to Outmoded Regulatory Scheme and Weak Economy," SBC Press Release, September 26, 2002.

1           In sum, all indications from the labor markets suggest that sufficient workers are  
2           available to manage the expected additional work load from incremental hot cuts.

3    Q.     Does this conclude your testimony?

4    A.     Yes.

5

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that copies of the foregoing were sent via electronic mail on December 4, 2003 and overnight delivery on December 4, 2003 to:

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## **Background and Qualifications of Witnesses**

### **Carleen A. Gray:**

I am employed by Verizon as a Senior Specialist Wholesale Markets. In that capacity, I am responsible for the product management of the unbundled analog and high cap loop offerings. I have more than 28 years experience in the telecommunications industry and have held a variety of positions with increasing levels of responsibility in Customer Services and Marketing departments.

### **Maryellen Langstine:**

I am employed by Verizon Services Corp. as a Director in the Wholesale Customer Support organization. Currently I direct the operations of the Wholesale Triennial Review Program Office. In addition, my responsibilities are to assist the organization in the identification and resolution of customer issues and to develop the Verizon response specific to those customer issues.

I have over twenty-four years of telecommunications experience with Verizon and its predecessors, primarily within customer service delivery operations. I have held a variety of positions managing line operations such as central office, installation and maintenance for POTS, Special Services and Special Services test centers. I directed a number of Verizon's Customer Service Centers, dedicated to servicing large corporate accounts with accountability for service order negotiation, billing, provisioning and maintenance. Most recently I had production responsibilities for Provider Notification and was the Director of OSS Change Management.

### **Thomas Maguire:**

I am a Senior Vice President in Verizon's Wholesale Markets Group with primary responsibility for CLEC Ordering, Provisioning and Maintenance. Since joining Verizon 22 years ago, I have held managerial positions in installation, maintenance and performance management, including coordination of "hot cuts" and the provisioning of new loops by the Regional CLEC Coordination Center "RCCC" as well as the overall operation of the Regional CLEC Maintenance Center "RCMC". I received a Bachelor of Science degree from Adelphi University, and an M.B.A. from Long Island University.

### **James L. McLaughlin:**

I lead a team of dedicated professionals providing an array of staff support to the Network Operations team including executive support, business unit continuity planning, financial and budget management, web development and recognition.

I was promoted to Executive Director in November 2001. I led a team responsible for the central office network restoration of the Verizon facility at 140 West St., NYC. The work encompassed replacement of hundreds of network elements,



switches and thousands of customer circuits.

From 1995 through 2001, I held various director responsibilities in network operations. I was responsible for providing and maintaining our world-class network infrastructure for our customers in Manhattan and the 132 LATA. In 1999, in conjunction with other directors and managers, I developed the central office "hot cut" certification process.

I began my career with New York Telephone company in 1990 as a central office supervisor and gained a variety of experience in both line and staff positions in network operations. My assignments included Special Services, Central Office operations and Network Operation Centers.

I hold a Bachelor of Science degree from Fordham University.

**Larry Richter:**

I am employed by Verizon as a Senior Staff Consultant - Witness. In that capacity I am responsible for testifying in support of Verizon's non-recurring wholesale, retail, access, and collocation cost studies. In this role, I work directly with Verizon's Costing group that prepares the cost studies. I received a Bachelors Degree in Business Administration from Northwood University, in Cedar Hill, Texas in 1995.

I have been employed by Verizon and its predecessor corporations for over 34 years. In 1968, I joined General Telephone Company in California, working in the Outside Plant Installation, Repair and Maintenance Department. I moved to Texas in 1973 and remained in the same job capacity.

In 1975, I was promoted to a management position where I was primarily associated with Network Operations in varying capacities, including first line supervision, area support, service and facilities management, each with increasing responsibilities. These responsibilities included the supervision of craft and management employees performing activities in the installation, repair, and maintenance of residential, business, and special access services in various exchanges in Texas.

In 1987, I became a manager in the Dispatch, Assignment, Repair, and Test ("DART") Center for one of the largest service centers in Texas. In 1988, I accepted a position in the Finance group providing business analysis, service results, and budget creation and tracking for Network Operations and Engineering and Construction work groups.

In 1996, I accepted another position in the Finance group in which I was responsible for all capital dollars allocated to the Texas/New Mexico Region for central office equipment and outside plant construction. In 1998, I accepted a

position at GTE Headquarters with the Costing group where I was responsible for the preparation and development of collocation, retail, wholesale, and access non-recurring cost studies. In 2000, I assumed the position of Senior Staff Consultant - Witness, with primary responsibility for testifying before state commissions in support of Verizon's non-recurring cost studies.

**Michael A. Nawrocki:**

I am a Principal Member of the Technical Staff within Verizon's Technology Organization. In my current position, I am responsible for providing technical support for new products and services developed by the Wholesale Marketing Organization. I have 25 years of experience with AT&T Western Electric, Bell Atlantic and Verizon. During that time, I was employed in various departments, including Network Planning and Network Engineering. In my previous assignments, I have experience in evaluating, approving and planning various types of transmission, loop access and switching products. I earned my Bachelor of Science degree from Johns Hopkins University and a Master of Science degree in Electrical Engineering from George Washington University.

### Complete List of Exhibits

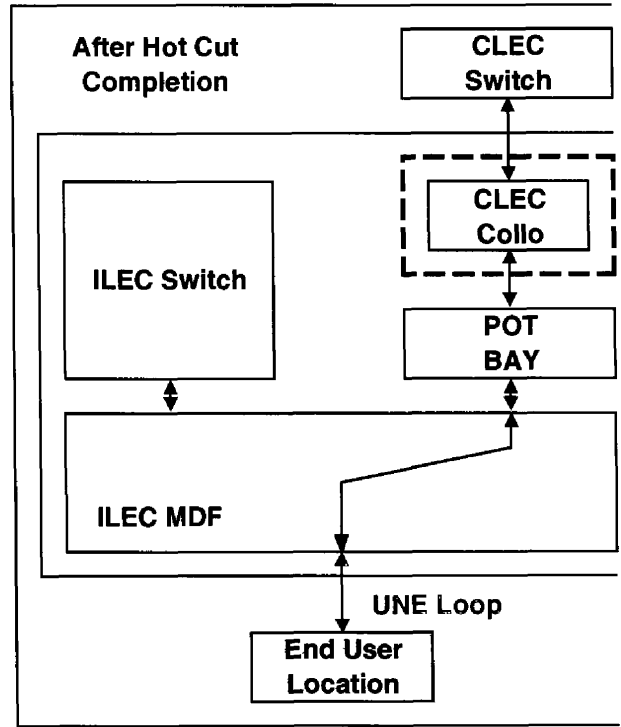
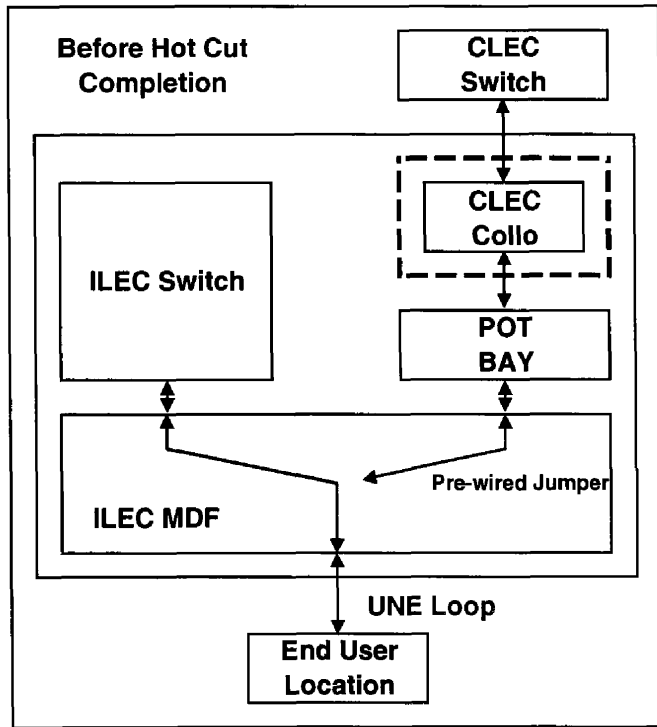
| <u>Exhibit</u> | <u>Description</u>   | <u>Proprietary</u> |
|----------------|--|--------------------|
| I-A            | Background and qualifications of witnesses                                 |                    |
| I-B            | Complete list of Exhibits  |                    |
| I-C            | Definitions of acronyms and other shorthand terms<br>used in the testimony |                    |
| II-A           | Hot Cut schematic  |                    |
| II-B-1         | IDLC Hot Cut   |                    |
| II-B-2         | IDLC Hot Cut   |                    |
| II-C-1         | Basic Hot Cut Process Flow   |                    |
| II-C-2         | Project Hot Cut Process Flow   |                    |
| II-C-3         | Proposed Batch Hot Cut Process Flow  |                    |
| III-A          | Non-recurring cost model   | YES                |
| IV-A           | Force-Load Model   | YES                |
| IV-B           | Force-Load Model Description   | YES                |
| IV-C           | U.S. Telecom employment data   |                    |
| WET-1          | Background and qualifications of witness                                   |                    |
| WET-I          | Examples of Bundled Offerings  |                    |
| WET-II         | Description of Data Used   |                    |
| WET-III        | Incremental Hot Cuts Resulting from Customer Migrations                    | YES                |
| WET-IV         | UNE-P Migrations   | YES                |
| WET-V          | Derivation of Winbacks from UNE-P Lines                                    | YES                |
| WET-VI         | Growth of Embedded Base  | YES                |
| WET-VII        | Conversion of Embedded Base  | YES                |
| WET-VIII       | U.S. Telecom employment data   |                    |

### ACRONYMS

|       |  |
|-------|--|
| APC   | Assignment Provisioning Center                 |
| BCN   | Billing Completion Notice                      |
| CLEC  | Competitive Local Exchange Carrier             |
| CO    | Central Office                                 |
| EDI   | Electronic Data Interface                      |
| FB    | Facilities Based                               |
| FCC   | Federal Communications Commission              |
| FLAF  | Forward-Looking Adjustment Factor              |
| FLM   | Force-Load Model                               |
| GAAP  | Generally Accepted Accounting Principles       |
| GRL   | Gross Revenue Loading                          |
| GUI   | Graphical User Interface                       |
| IDLC  | Integrated Digital Loop Carrier                |
| ILEC  | Incumbent Local Exchange Carrier               |
| ISO   | International Organization for Standardization |
| IXC   | Interexchange Carrier                          |
| LATA  | Local Access and Transport Area                |
| LEC   | Local Exchange Carrier                         |
| LNPC  | Local Number Portability Center                |
| LSI   | Local Service Interface                        |
| LSR   | Local Service Request                          |
| LST   | Line and Station Transfer                      |
| MDF   | Main Distributing Frame                        |
| NGDLC | Next Generation Digital Loop Carrier           |
| NMC   | National Market Center                         |
| NPAC  | Number Portability Administration Center       |
| NRC   | Non-Recurring Cost                             |
| OSS   | Operational Support System                     |

|        |   |
|--------|---|
| PCN    | Provisioning Completion Notice              |
| PIC    | Primary Interexchange Carrier               |
| PON    | Purchase Order Number                       |
| POT    | Point of Termination                        |
| RCCC   | Regional CLEC Coordination Center           |
| RCMAC  | Recent Change Memory Administration Center  |
| RT     | Remote Terminal                             |
| SAI    | Serving Area Interface                      |
| SOP    | Service Order Processor                     |
| TELRIC | Total Element Long Run Incremental Cost     |
| TISOC  | Telecom Industry Services Operations Center |
| UDLC   | Universal Digital Loop Carrier              |
| UNE    | Unbundled Network Element                   |
| UNE-L  | UNE Loop                                    |
| UNE-P  | UNE Platform                                |
| VIP    | Verizon Incentive Plan                      |
| WFA    | Work Force Administration                   |
| WFA-DI | Work Force Administration – Dispatch In     |
| WPTS   | Wholesale Provisioning and Tracking System  |

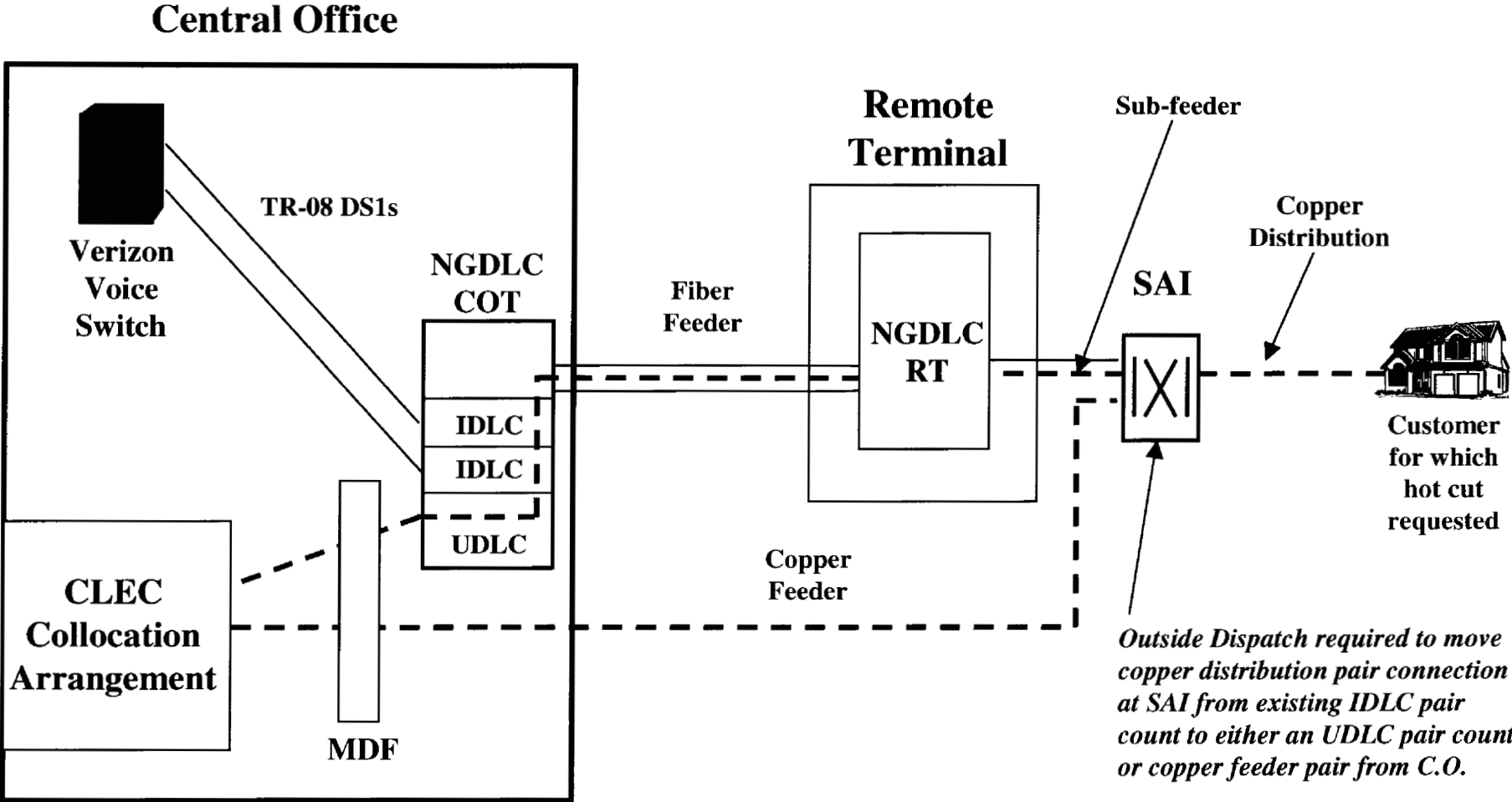
### Verizon Basic Hot Cut Process Flow



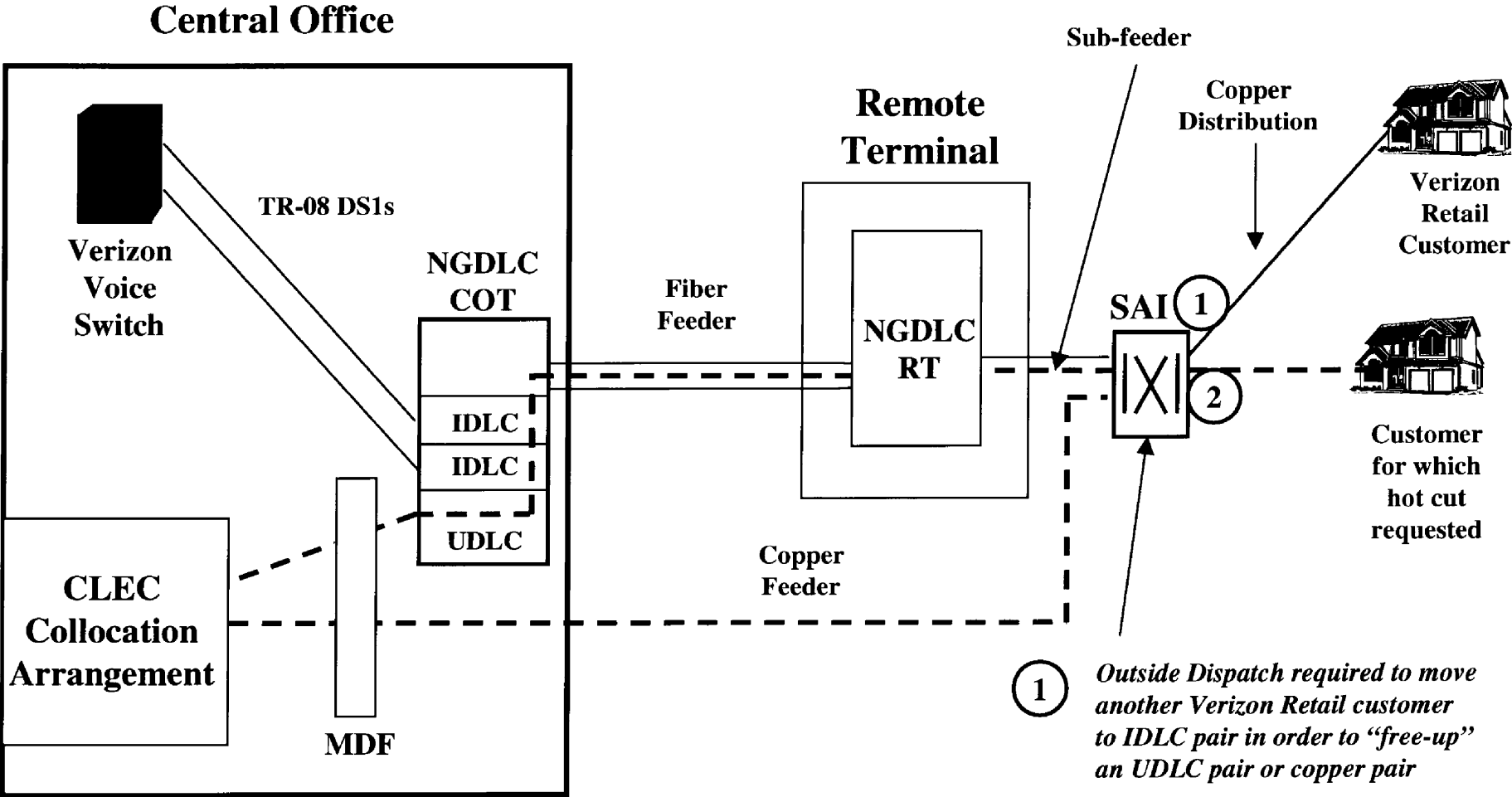
- ILEC Equipment
- CLEC Equipment
- Central Office

- Permanent Central Office Wiring
- ILEC Jumper
- CLEC Jumper

**Exhibit II-B-1**  
**December 4, 2003 Initial Testimony**  
**Dockets 030851-TP and 030852-TP**



**Exhibit II-B-2**  
**December 4, 2003 Initial Testimony**  
**Dockets 030851-TP and 030852-TP**

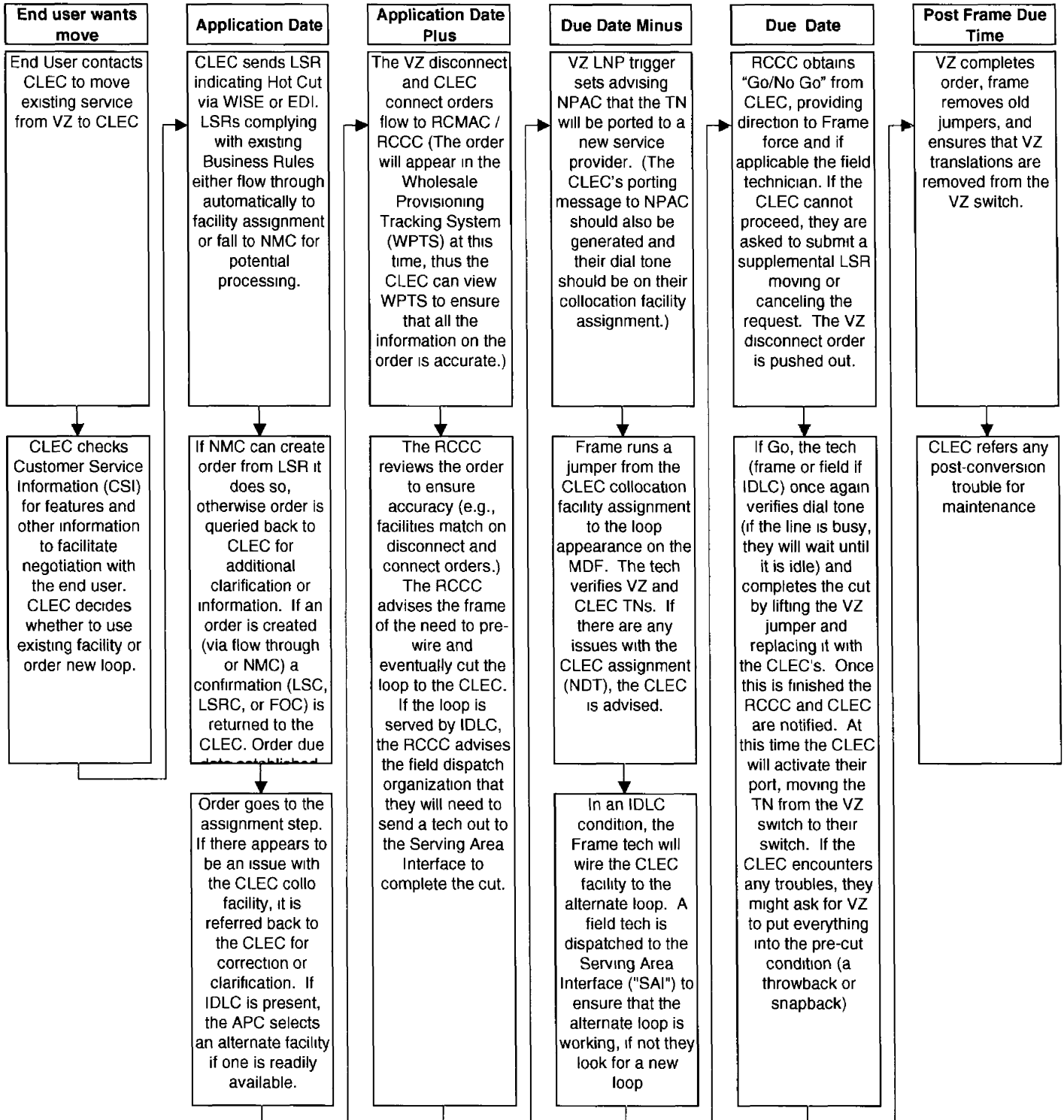


① *Outside Dispatch required to move another Verizon Retail customer to IDLC pair in order to “free-up” an UDLC pair or copper pair*

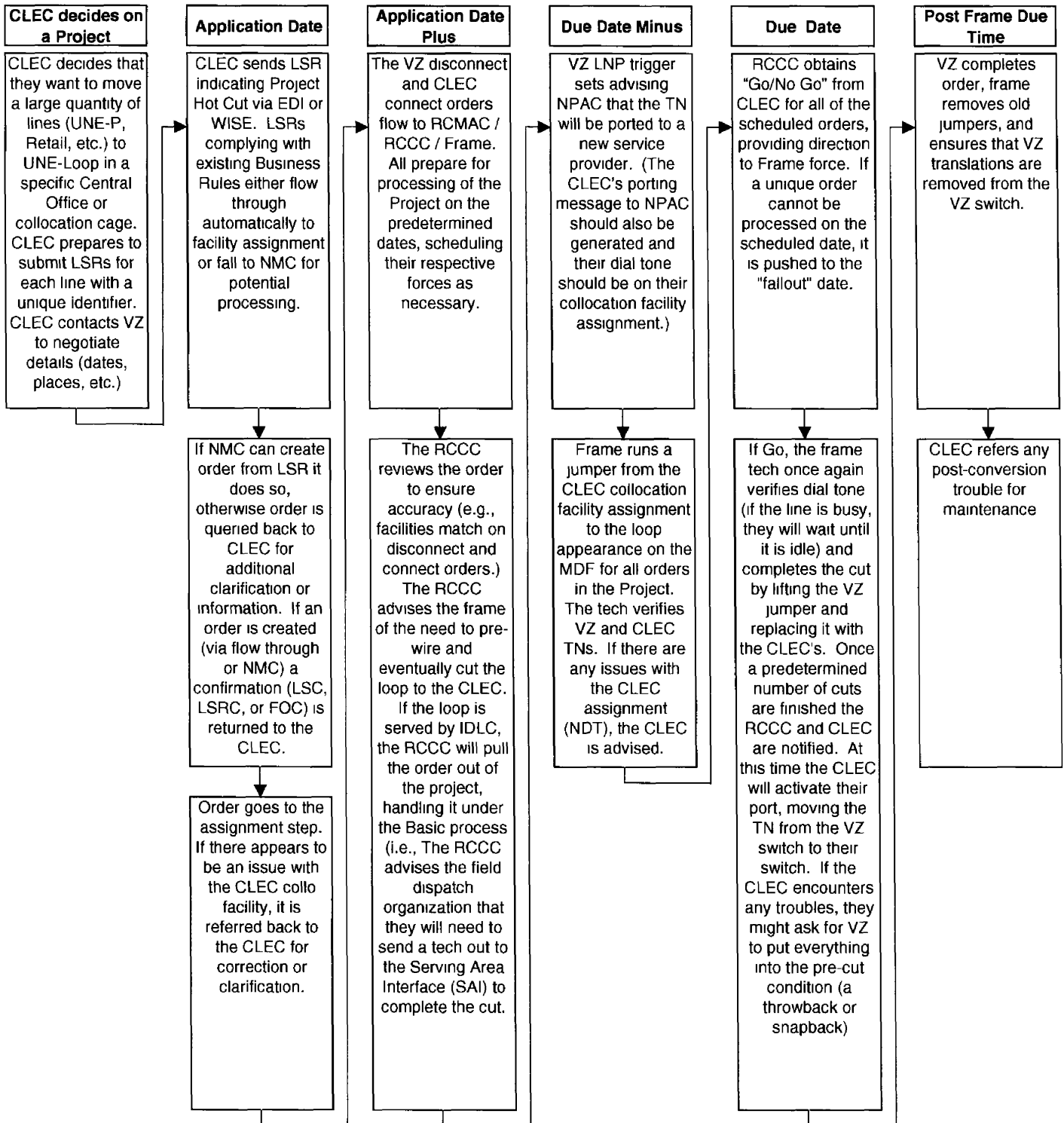
② *Customer for which the hot cut was requested is then moved to “freed up” UDLC or copper pair*



### Verizon Basic Hot Cut Process Flow

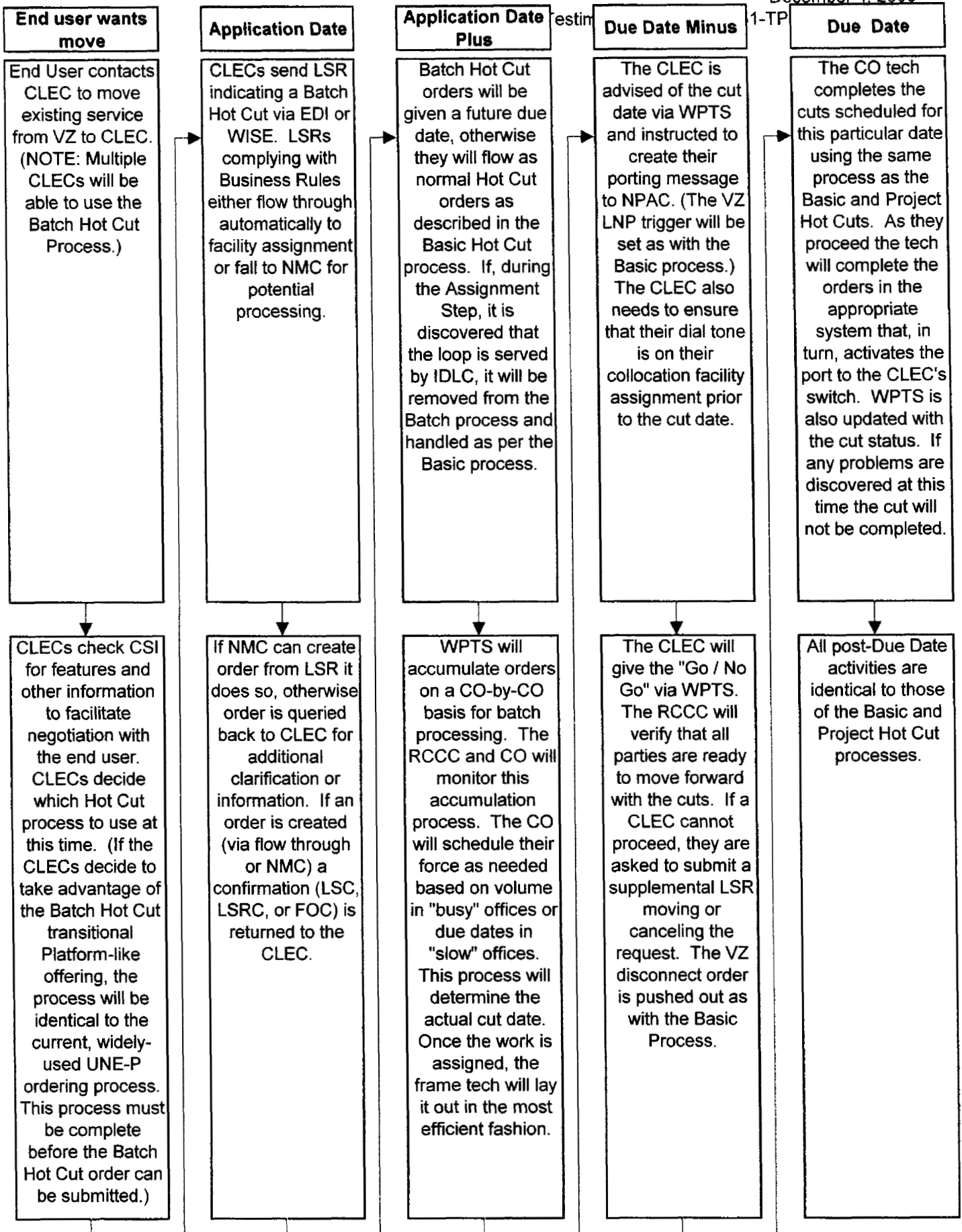


### Verizon Project Hot Cut Process Flow



# Verizon Proposed Batch Hot Cut Process Flow

Exhibit II-C-3  
December 4, 2003



**EXHIBIT III-A  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT IV-A  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

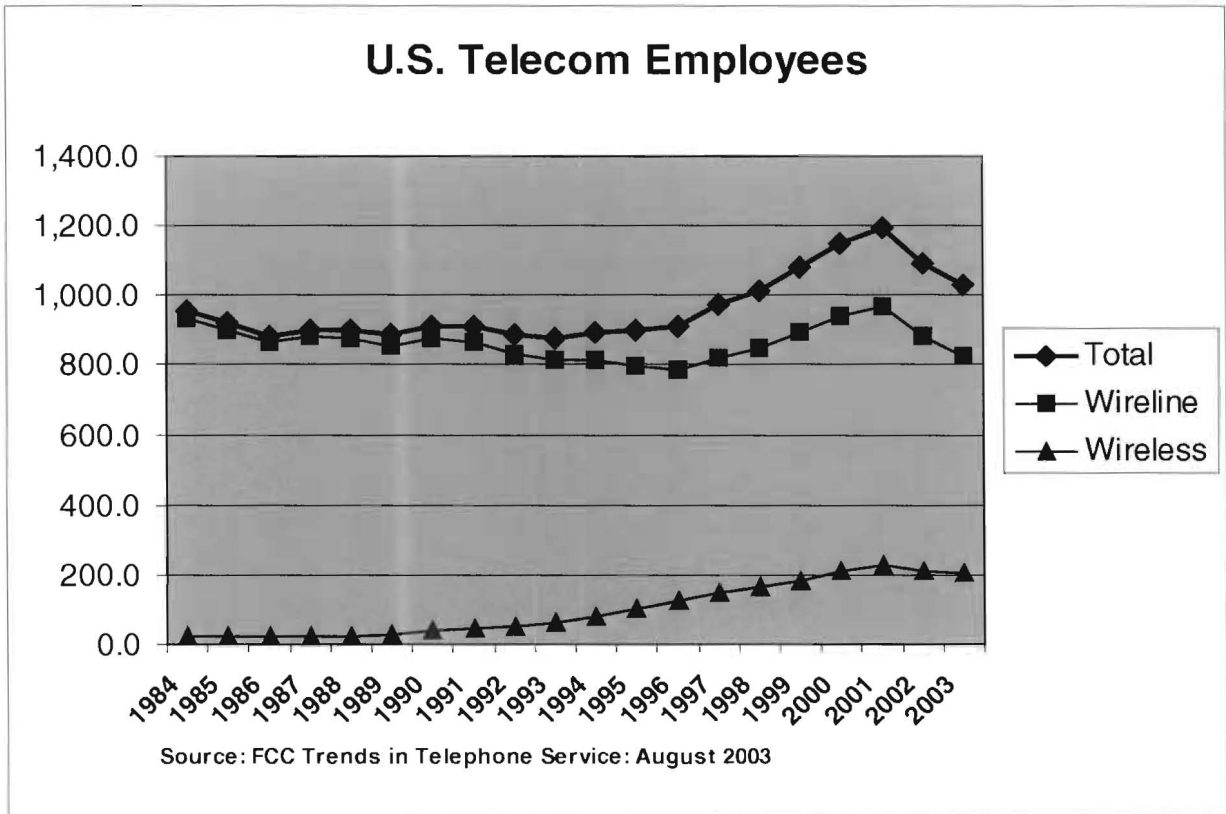
**[END VERIZON PROPRIETARY]**

**EXHIBIT IV-B  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

EXHIBIT IV-C



**WILLIAM E. TAYLOR**

**BUSINESS ADDRESS**

National Economic Research Associates, Inc.  
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Cambridge, Massachusetts 02142  
(617) 621-2615

Dr. Taylor received a B.A. *magna cum laude* in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor is a Senior Vice President, heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, terms and conditions for competitive parity in local competition, quantitative analysis of state and federal price cap and incentive regulation proposals, and antitrust problems in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, federal and state congressional committees and courts. Recently, he was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico. Other recent work includes studies of the competitive effects of major mergers among telecommunications firms and analyses of vertical integration and interconnection of telecommunications networks. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the *International Economic Review*, the *Journal of Econometrics*, *Econometric Reviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others) and the National Science Foundation and has served as an Associate Editor of the *Journal of Econometrics*.

**EDUCATION**

UNIVERSITY OF CALIFORNIA, BERKELEY  
Ph.D., Economics, 1974

UNIVERSITY OF CALIFORNIA, BERKELEY  
M.A., Statistics, 1970



HARVARD COLLEGE  
B.A., Economics, 1968  
(Magna Cum Laude)

## EMPLOYMENT

- 1988- NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)  
Senior Vice President, Office Head, Telecommunications Practice Director.
- 1983-1988 BELL COMMUNICATIONS RESEARCH, INC. (Bellcore)  
Division Manager, Economic Analysis, formerly Central Services Organization, formerly American Telephone and Telegraph Company: theoretical and quantitative work on problems raised by the Bell System divestiture and the implementation of access charges, including design and implementation of demand response forecasting for interstate access demand, quantification of potential bypass liability, design of optimal nonlinear price schedules for access charges and theoretical and quantitative analysis of price cap regulation of access charges.
- 1975-1983 BELL TELEPHONE LABORATORIES  
Member, Technical Staff, Economics Research Center: basic research on theoretical and applied econometrics, focusing on small sample theory, panel data and simultaneous equations systems.
- Fall 1977 MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Visiting Associate Professor, Department of Economics: taught graduate courses in econometrics.
- 1974-1975 CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS  
Université Catholique de Louvain, Belgium.  
Post Doctoral Research Associate: basic research on finite sample econometric theory and on cost function estimation.
- 1972-1975 CORNELL UNIVERSITY  
Assistant Professor, Department of Economics. (On leave 1974-1975.) taught graduate and undergraduate courses on econometrics, microeconomic theory and economic principles.

**MISCELLANEOUS**

- 1985-1995 Associate Editor, *Journal of Econometrics*, North-Holland Publishing Company.  
1990- Board of Directors, National Economic Research Associates, Inc.  
1995- Board of Trustees, Treasurer, Episcopal Divinity School, Cambridge,  
Massachusetts.

**PUBLICATIONS**

- “Smoothness Priors and Stochastic Prior Restrictions in Distributed Lag Estimation,”  
*International Economic Review*, 15 (1974), pp. 803-804.
- “Prior Information on the Coefficients When the Disturbance Covariance Matrix is Unknown,”  
*Econometrica*, 44 (1976), pp. 725-739.
- “Small Sample Properties of a Class of Two Stage Aitken Estimators,” *Econometrica*, 45 (1977),  
pp. 497-508.
- “The Heteroscedastic Linear Model: Exact Finite Sample Results,” *Econometrica*, 46 (1978), pp.  
663-676.
- “Small Sample Considerations in Estimation from Panel Data,” *Journal of Econometrics*, 13  
(1980) pp. 203-223.
- “Comparing Specification Tests and Classical Tests,” Bell Laboratories Economics Discussion  
Paper, 1980 (with J.A. Hausman).
- “Panel Data and Unobservable Individual Effects,” *Econometrica*, 49 (1981), pp. 1377-1398  
(with J.A. Hausman).
- “On the Efficiency of the Cochrane-Orcutt Estimator,” *Journal of Econometrics*, 17 (1981), pp.  
67-82.
- “A Generalized Specification Test,” *Economics Letters*, 8 (1981), pp. 239-245 (with J.A.  
Hausman).
- “Identification in Linear Simultaneous Equations Models with Covariance Restrictions: An  
Instrumental Variables Interpretation,” *Econometrica*, 51 (1983), pp. 1527-1549 (with J.A.  
Hausman).
- “On the Relevance of Finite Sample Distribution Theory,” *Econometric Reviews*, 2 (1983), pp. 1-  
84.
- “Universal Service and the Access Charge Debate: Comment,” in P.C. Mann and H.M. Trebing  
(editors) *Changing Patterns in Regulation, Markets, and Technology: The Effect on Public Utility  
Pricing*. The Institute of Public Utilities, Michigan State University, 1984.

“Recovery of Local Telephone Plant Costs under the St. Louis Plan,” in P.C. Mann and H.M. Trebing (editors) *Impact of Deregulation and Market Forces on Public Utilities*. The Institute of Public Utilities, Michigan State University, 1985.

“Access Charges and Bypass: Some Approximate Magnitudes,” in W.R. Cooke (editor) *Proceedings of the Twelfth Annual Telecommunications Policy Research Conference*, 1985.

“Federal and State Issues in Non-Traffic Sensitive Cost Recovery,” in *Proceedings from the Telecommunications Deregulation Forum*, Karl Eller Center, College of Business and Public Administration, University of Arizona, Tucson, Arizona, 1986.

“Panel Data” in N.L. Johnson and S. Kotz (editors), *Encyclopedia of Statistical Sciences*, John Wiley & Sons, New York, 1986.

“An Analysis of Tapered Access Charges for End Users,” in P.C. Mann and H.M. Trebing (editors) *New Regulatory and Management Strategies in a Changing Market Environment*. The Institute of Public Utilities, Michigan State University, 1987 (with D.P. Heyman, J.M. Lazorchak, and D.S. Sibley).

“Efficient Estimation and Identification of Simultaneous Equation Models with Covariance Restrictions,” *Econometrica*, 55 (1987), pp. 849-874 (with J.A. Hausman and W.K. Newey).

“Alternative NTS Recovery Mechanisms and Geographic Averaging of Toll Rates,” in *Proceedings of the Thirteenth Annual Rate Symposium: Pricing Electric, Gas, and Telecommunications Services*. The Institute for the Study of Regulation, University of Missouri, Columbia, 1987.

“Price Cap Regulation: Contrasting Approaches Taken at the Federal and State Level,” in W. Bolter (editor), *Federal/State Price-of-Service Regulation: Why, What and How?*, Proceedings of the George Washington University Policy Symposium, December, 1987.

“Local Exchange Pricing: Is There Any Hope?,” in J. Alleman (editor), *Perspectives on the Telephone Industry: The Challenge of the Future*, Ballinger Publishing Company, Cambridge, Massachusetts, 1989.

“Generic Costing and Pricing Problems in the New Network: How Should Costs be Defined and Assessed,” in P.C. Mann and H.M. Trebing (editors) *New Regulatory Concepts, Issues, and Controversies*. The Institute of Public Utilities, Michigan State University, 1989.

“Telephone Penetration and Universal Service in the 1980s,” in B. Cole (editor), *Divestiture Five Years Later*, Columbia University Press, New York, New York, 1989 (with L.J. Perl).

“Regulating Competition for IntraLATA Services,” in *Telecommunications in a Competitive Environment*, Proceedings of the Third Biennial NERA Telecommunications Conference, 1989, pp. 35-50.

“Costing Principles for Competitive Assessment,” in *Telecommunications Costing in a Dynamic Environment*, Bellcore-Bell Canada Conference Proceedings, 1989 (with T.J. Tardiff).

"Optional Tariffs for Access in the FCC's Price Cap Proposal," in M. Einhorn (ed.), *Price Caps and Incentive Regulation in the Telecommunications Industry*, Kluwer, 1991 (with D.P. Heyman and D.S. Sibley).

"Alternative Measures of Cross-Subsidization," prepared for the Florida Workshop on Appropriate Methodologies for the Detection of Cross-Subsidies, June 8, 1991.

"Predation and Multiproduct Firms: An Economic Appraisal of the Sievers-Albery Results," *Antitrust Law Journal*, 30 (1992), pp. 785-795.

"Lessons for the Energy Industries from Deregulation in Telecommunications," *Proceedings of the 46th Annual Meeting of the Federal Energy Bar Association*, May, 1992.

"Efficient Price of Telecommunications Services: The State of the Debate," *Review of Industrial Organization*, Vol. 8, pp. 21-37, 1993.

"Status and Results of Regulatory Reform in the U.S. Telecommunications Industry," in C.G. Stalon, *Regulatory Responses to Continuously Changing Industry Structures*, The Institute of Public Utilities, Michigan State University, 1992.

"Post-Divestiture Long-Distance Competition in the United States," *American Economic Review*, Vol. 83, No. 2, May 1993 (with Lester D. Taylor). Reprinted in E. Bailey, J. Hower, and J. Pack, *The Political Economy of Privatization and Deregulation*, (London: Edward Elgar), 1994.

"Comment on 'Pricing of Inputs Sold to Competitors,' by W.J. Baumol and J.G. Sidak," *Yale Journal on Regulation*, Vol. 11, Issue 1, 1994, pp. 225-240 (with Alfred E. Kahn).

"Comments on Economic Efficiency and Incentive Regulation," Chapter 7 in S. Globerman, W. Stanbury and T. Wilson, *The Future of Telecommunications Policy in Canada*, Toronto: Institute for Policy Analysis, University of Toronto, April 1995.

"Revising Price Caps: The Next Generation of Incentive Regulation Plans," Chapter 2 in M.A. Crew (ed.) *Pricing and Regulatory Innovations under Increasing Competition*, Boston: Kluwer Academic Publishers, May 1996 (with T. Tardiff).

"An Analysis of the State of Competition in Long-Distance Telephone Markets," *Journal of Regulatory Economics*, May, 1997, pp. 227-256 (with J.D. Zona).

"An Analysis of the Welfare Effects of Long Distance Market Entry by an Integrated Access and Long Distance Provider", *Journal of Regulatory Economics*, March, 1998, pp. 183-196 (with Richard Schmalensee, J.D. Zona and Paul Hinton).

"Market Power and Mergers in Telecommunications," *Proceedings of the Institute of Public Utilities; 30<sup>th</sup> Annual Conference: Competition in Crisis: Where are Network Industries Heading?*, The Institute of Public Utilities, Michigan State University, 1999.

"The Baby and the Bathwater: Utility Competition, But at What Price?," *Public Utilities Fortnightly*, Vol. 137, No.21, November 15, 1999, pp. 48-56 (with Anne S. Babineau and Matthew M. Weissman).

## TESTIMONIES

### *Alabama*

1. Alabama Public Service Commission (Docket No. 25677), on behalf of BellSouth Telecommunications, Inc., direct testimony regarding economic aspects of avoided costs of services supplied for resale. Filed November 26, 1996.
2. Alabama Public Service Commission, on behalf of BellSouth Long Distance, Inc., (Docket No. 25835): direct testimony regarding the probable economic benefits to consumers in Alabama from entry by BellSouth into the interLATA long distance market. Filed June 18, 1997. Rebuttal testimony filed August 8, 1997.
3. Alabama Public Service Commission, on behalf of BellSouth Telecommunications, Inc., (Docket No. 26029): rebuttal testimony of intervenor testimonies in BellSouth's cost and unbundled network element pricing docket in Alabama. Filed September 12, 1997.
4. Alabama Public Service Commission (Docket No. 25980), on behalf of BellSouth Telecommunications: rebuttal testimony regarding revenue benchmarks and other matters in universal service funding. Filed February 13, 1998.
5. Alabama Public Service Commission (Docket No. 27091), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed October 14, 1999.
6. Alabama Public Service Commission (Docket No. 25835), on behalf of BellSouth Telecommunications, Inc., economic aspects of service quality penalty plans. Rebuttal testimony filed June 19, 2001.
7. Alabama Public Service Commission (Docket Nos. 15957 and 27989), on behalf of BellSouth Telecommunications, Inc.: economic support for promotional offerings. Direct testimony filed August 3, 2001, rebuttal testimony filed August 13, 2001. Additional rebuttal testimony filed August 17, 2001.
8. Alabama Public Service Commission (Docket No. 25835), on behalf of BellSouth Telecommunications, Inc., economic aspects of structural separations. Surrebuttal testimony filed July 24, 2001.

### *Alaska*

9. Alaskan Public Utilities Commission, (Docket Nos. U-98-140/141/142 and U-98-173/174), testimony regarding the economic effects on competition of the acquisitions of Telephone Utilities of Alaska, Telephone Utilities of the Northland, Inc., and PTI Communications of Alaska by ALEC Acquisition Sub Corporation and of Anchorage Telephone Utility and ATU Long Distance, Inc. by Alaska Communications Systems, Inc. Filed February 2, 1999. Rebuttal testimony filed March 24, 1999.

### *Arizona*

10. Arizona State Air Pollution Control Hearing Board (Docket No. A-90-02) on behalf of Arizona Public Service Company. A statistical study of SO<sub>2</sub> emissions entitled, "Analysis of Cholla Unit 2 SO<sub>2</sub> Compliance Test Data," (October 24, 1990) and an Affidavit (December 7, 1990).
11. Arizona Corporation Commission (Docket Nos. T-02432B-00-0026, T-01051B-00-0026), on behalf of US WEST Communications, Inc., direct testimony regarding intercarrier compensation

for Internet-bound traffic. Filed March 27, 2000.

12. Arizona Corporation Commission (Docket No. T-01051B-99-0497), on behalf of US West Communications, Inc., rebuttal testimony regarding economic issues arising in the proposed merger between U S WEST and Qwest. Filed April 3, 2000.

13. Arizona Corporation Commission (Docket No. T-01051B-99-105), on behalf of Qwest Corporation., rebuttal testimony regarding rate design. Filed August 21, 2000.

14. Arizona Corporation Commission (Docket Nos. T-03654A-00-0882,T-01051B-00-0882), on behalf of Qwest Corporation, direct testimony regarding intercarrier compensation for internet-bound traffic. Filed January 8, 2001.

15. Arizona Corporation Commission (Docket No. T-00000A-00-0194, Phase 2), on behalf of Qwest Corporation., direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed March 15, 2001.

#### *Arkansas*

16. Arkansas Public Service Commission (Docket No. 83-042-U) on behalf of Southwestern Bell Telephone Company: economic analysis of non-traffic sensitive cost recovery proposals. Filed October 7, 1985.

#### *California*

17. California Public Utilities Commission (Case 88-04-029) on behalf of Pacific Bell: commission payment practices, cross-subsidization of pay telephones, and compensation payments to competitive pay telephone suppliers. Filed July 11, 1988.

18. California Public Utilities Commission (Phase II of Case 90-07-037) on behalf of Pacific Bell: economic analysis of the effects of FAS 106, (accrual accounting for post-retirement benefits other than pensions) under state price cap regulation, (with Timothy J. Tardiff). Filed August 30, 1991. Supplemental testimony filed January 21, 1992.

19. California Public Utilities Commission, (Docket No. I.87-11-033), on behalf of Pacific Bell, "The New Regulatory Framework 1990-1992: An Economic Review," (with T.J. Tardiff). Filed May 1, 1992.

20. California Public Utilities Commission, (Docket No. I.87-11-033), on behalf of Pacific Bell, "Pacific Bell's Performance Under the New Regulatory Framework: An Economic Evaluation of the First Three Years," (with T.J. Tardiff). Filed April 8, 1993, reply testimony filed May 7, 1993.

21. California Public Utilities Commission, (Investigation No. I.95-05-047), on behalf of Pacific Bell, "Incentive Regulation and Competition: Issues for the 1995 Incentive Regulation Review," (with R.L. Schmalensee and T.J. Tardiff). Filed September 8, 1995, reply testimony filed September 18, 1995.

22. California Public Utilities Commission, (U 1015 C) on behalf of Roseville Telephone Company, testimony regarding productivity measures in Roseville's proposed new regulatory framework. Filed May 15, 1995. Rebuttal testimony filed January 12, 1996.

23. California Public Utilities Commission, on behalf of Pacific Bell: Comments on the economic principles for updating Pacific Bell's price cap plan. Filed February 2, 1998.

24. California Public Utilities Commission, on behalf of Pacific Bell: reply comments regarding proposed changes to the price cap plan, filed June 19, 1998.

25. California Public Utilities Commission on behalf of California American Water Company, RWE AG, Thames Water Aqua Holding GmbH, Thames Water Plc and Apollo Acquisition Company, economic support regarding the merger between American Water Company and

Thames Water, direct testimony filed May 17, 2002, rebuttal testimony filed July 15, 2002.

*Colorado*

26. Colorado Public Utilities Commission (Docket No. 97A-540T), on behalf of U S WEST: testimony concerning the economic effects of a proposed price regulation plan. Direct testimony filed January 30, 1998. Rebuttal testimony filed May 14, 1998.
27. Colorado Public Utilities Commission (Docket No. 99A-001T), on behalf of US WEST, regarding US WEST's interconnection arbitration with AirTouch Paging in Colorado. Rebuttal testimony filed March 15, 1999.
28. Colorado Public Utilities Commission (Docket No. 99A-407T), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare, filed December 7, 1999.
29. Colorado Public Utilities Commission (Docket No. 00B-011T), on behalf of US West Communications, Inc., direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed March 28, 2000.
30. Colorado Public Utilities Commission (Docket No. 00B-103T), on behalf of US West Communications, Inc., rebuttal testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with ICG. Filed June 19, 2000.
31. Colorado Public Utilities Commission (Docket No. 00B-601T), on behalf of Qwest. Rebuttal testimony regarding intercarrier compensation for internet-bound traffic in arbitration with Level 3. Filed January 16, 2001.

*Connecticut*

32. State of Connecticut, Department of Public Utility Control, (DPUC Docket No. 95-03-01) on behalf of Southern New England Telephone Company, testimony concerning productivity growth targets in a proposed state price cap regulation plan. Filed June 19, 1995.
33. State of Connecticut, Department of Public Utility Control, (DPUC Docket No. 95-06-17) on behalf of Southern New England Telephone Company: testimony concerning economic principles of costing and cost recovery. Filed July 23, 1996.
34. Connecticut Department of Public Utilities (DPUC Docket No. 96-09-22), on behalf of the Southern New England Telephone Company. Rebuttal testimony regarding alternative models of cost. Filed January 24, 1997.
35. Connecticut Department of Public Utilities (DPUC Docket No. 96-11-03), on behalf of the Woodbury Telephone Company, statement regarding the effects of resale and the provision of unbundled network elements on a rural telephone company. Filed February 11, 1997.
36. State of Connecticut, Department of Public Utility Control (Docket Nos. 95-03-01, 95-06-17 and 96-09-22), on behalf of Southern New England Telephone Company: direct testimony discussing economic principles the DPUC should use in evaluating SNET's joint and common overhead and network support expenses. Filed August 29, 1997. Rebuttal testimony filed December 17, 1998.
37. State of Connecticut, Department of Public Utility Control (Docket No. 96-04-07) on behalf of Southern New England Telephone Company: direct testimony regarding economic principles guiding access charge reform. Filed October 16, 1997.
38. State of Connecticut, Department of Public Utility Control (Docket No. 98-02-33), on behalf of Southern New England Telephone Company: direct testimony regarding reclassification of custom calling services as emerging competitive. Filed February 27, 1998.
39. Connecticut Department of Public Utility Control, on behalf of SBC Communications Inc. and Southern New England Telecommunications Corporation: direct testimony regarding the

SBC-SNET merger, filed June 1, 1998.

40. Connecticut Department of Public Utility Control (Docket No. 95-06-17RE02), on behalf of The Southern New England Telephone Company, rebuttal testimony regarding local competition and reseller market. Filed June 8, 1999.

41. Connecticut Department of Public Utilities (Docket No. 99-03-17), on behalf of The Southern New England Telephone Company, rebuttal testimony regarding market power and termination liabilities in contracts. Filed June 18, 1999.

42. Connecticut Department of Public Utilities (Docket No. 00-07-17), on behalf of The Southern New England Telephone Company, testimony regarding local competition and pricing. Filed November 21, 2000.

#### *Delaware*

43. Delaware Public Service Commission (Docket No. 86-20, Phase II) on behalf of The Diamond State Telephone Company: appropriate costing and pricing methods for a regulated firm facing competition. Filed March 31, 1989. Rebuttal testimony filed November 17, 1989.

44. Delaware Public Service Commission (Docket No. 89-24T) on behalf of The Diamond State Telephone Company: rebuttal testimony describing the appropriate costing and pricing methods for the provision of contract Centrex services by a local exchange carrier. Filed August 17, 1990.

45. Delaware Public Utilities Commission, (Docket No. 33), on behalf of Diamond State Telephone Company, "Incentive Regulation of Telecommunications Utilities in Delaware," filed June 22, 1992.

46. Delaware Public Utilities Commission, (Docket No. 33), on behalf of Diamond State Telephone Company, analysis of productivity growth and a proposed incentive regulation plan: "Reply Comments," June 1, 1993, "Supplementary Statement," June 7, 1993, "Second Supplementary Statement," June 14, 1993.

47. Delaware Public Utilities Commission, (Docket No. 42), on behalf of Bell Atlantic - Delaware, rebuttal testimony concerning the historical effects of equal access competition in interstate toll markets and the likely future effects of competition under 1+ presubscription in Delaware. Filed October 21, 1994.

48. Delaware Public Utilities Commission, on behalf of Bell Atlantic - Delaware, direct testimony regarding costs and pricing of interconnection and network elements. Filed December 16, 1996. Rebuttal testimony (proprietary) filed February 11, 1997.

49. Delaware Public Utilities Commission, on behalf of Bell Atlantic - Delaware: statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets. Filed February 26, 1997. Rebuttal testimony filed April 28, 1997.

50. Delaware Public Service Commission (PSC Docket No. 00-205), on behalf of Bell Atlantic-Delaware, direct testimony responding to the Petition for Arbitration of Focal Communications Group. Filed April 25, 2000.

#### *District of Columbia*

51. Affidavit to the U.S. District Court for the District of Columbia on behalf of Bell Atlantic Corporation in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, re relief from the interLATA restrictions of the MFJ in connection with the pending merger with Tele-Communications, Inc. and Liberty Media Corporation. Filed January 14, 1994, (with A.E. Kahn).

52. Affidavit to the U.S. District Court for the District of Columbia on behalf of Southwestern Bell in *United States of America v. Western Electric Company, Inc. and American Telephone and*



*Telegraph Company*, regarding provision of telecommunications and information services across LATA boundaries outside the regions in which its local exchange operations are located. Filed May 13, 1994, (with A.E. Kahn).

53. District of Columbia, Public Service Commission (Case No. 962), on behalf of Bell Atlantic - Washington, D.C., direct testimony regarding costing and pricing of interconnection and network elements. Filed January 17, 1997. Rebuttal testimony filed May 2, 1997.

54. Public Service Commission of the District of Columbia (Case No. 962), on behalf of Bell Atlantic - Washington, D.C., direct testimony regarding costing and pricing of interconnection and network elements. Filed July 16, 2001. Rebuttal testimony filed January 11, 2002.

55. United States District Court for the District of Columbia, (MDL No. 1285, Misc. No 99-0197 (TFH)), Declaration regarding statistical issues in measuring damages from price fixing in the vitamin industry, filed October 31, 2002. Reply Declaration filed January 15, 2003.

#### *Florida*

56. Florida Public Service Commission (Docket No. 820537-TP) on behalf of Southern Bell Telephone and Telegraph Company: economic analysis of premium intraLATA access charges. Filed July 22, 1983.

57. Florida Public Service Commission (Docket No. 820400-TP) on behalf of Southern Bell Telephone and Telegraph Company: economic principles underlying a proposed method for calculating marginal costs for private line services. Filed June 25, 1986.

58. Florida Public Service Commission (Docket No. 880069-TL) on behalf of Southern Bell Telephone and Telegraph Company: economic incentives for firms under the proposed Florida Rate Stabilization Plan. Filed June 10, 1988.

59. Florida Public Service Commission (Docket No. 900633-TL) on behalf of Southern Bell Telephone and Telegraph Company: alternative measures of cross-subsidization. May 9, 1991.

60. Florida Public Service Commission (Docket No. 920260-TL) on behalf of Southern Bell Telephone and Telegraph Company: economic analysis of a proposed price cap regulation plan. December 18, 1992.

61. Florida Public Service Commission (Docket No. 920385-TL) on behalf of Southern Bell Telephone and Telegraph Company: the economic relationship between depreciation rates, investment, and infrastructure development. September 3, 1992.

62. Florida Public Service Commission on behalf of BellSouth, "Local Telecommunications Competition: An Evaluation of a Proposal by the Communications Staff of the Florida Public Service Commission," filed November 21, 1997 (with A. Banerjee).

63. Florida Public Service Commission (Docket No. 980000-SP) on behalf of BellSouth Telecommunications, Inc.: "Costing and Pricing Principles for Determining Fair and Reasonable Rates Under Competition," economic principles for pricing local exchange services, filed September 24, 1998.

64. Florida Public Service Commission (Docket No. 980000-SP) on behalf of BellSouth Telecommunications, Inc.: "Determining Fair and Reasonable Rates Under Competition: Response to Major Themes at the FPSC Workshop," economic principles for pricing local exchange services, filed November 13, 1998.

65. Florida Public Service Commission (Docket No. 980696-TP) on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony regarding measurements of cost for sizing a universal service fund, filed September 2, 1998.

66. Florida Public Service Commission (Docket No. 990750-TP), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed September 13, 1999.

67. Florida Public Service Commission (Docket No. 000075-TP) on behalf BellSouth

- Telecommunications, Inc.: rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed January 10, 2001.
68. Florida Public Service Commission (Docket No000121-TP) on behalf BellSouth Telecommunications, Inc.: direct testimony regarding properties of a service quality performance assurance plan. Filed March 1, 2001. Rebuttal filed March 21, 2001.
69. Florida Public Service Commission (Docket No. 000075-TP) on behalf BellSouth Telecommunications, Inc., rebuttal testimony regarding efficient intercarrier compensation, filed April 12, 2001.
70. Florida Public Service Commission (Docket No. 960786-TL) on behalf BellSouth Telecommunications, Inc.: surrebuttal testimony regarding the state of local competition in Florida, filed August 20, 2001.
71. Florida Public Service Commission (Docket Nos. 020119-TP and 020578-TP) on behalf of BellSouth Telecommunications, Inc., regarding competitive promotional offerings. Direct testimony filed October 23, 2002, rebuttal filed November 25, 2002.
72. Florida Public Service Commission (Docket No. 020507-TP) on behalf of BellSouth Telecommunications, Inc., regarding bundling of basic and non-basic services. Rebuttal testimony filed December 23, 2002.
73. U.S. District Court, Southern District of Florida (Case No. 99-1706), on behalf of BellSouth Telecommunications, Confidential Reply Affidavit ("Economic Assessment of Damages"). Filed April 25, 2003.
74. Florida Public Service Commission (Docket No. 030869-TL), on behalf of BellSouth Telecommunications, Inc., regarding rate rebalancing in the Florida Statutes. Direct testimony filed August 27, 2003.

*Georgia*

75. Georgia Public Service Commission (Docket No. 3882-U) on behalf of Southern Bell Telephone and Telegraph Company: analysis of incentive regulation plans. Filed September 29, 1989.
76. Georgia Public Service Commission (Docket No. 6863-U) on behalf of BellSouth Long Distance, Inc., direct testimony concerning benefits from BellSouth participation in long distance service markets. Filed January 3, 1997. Rebuttal testimony filed February 24, 1997.
77. Georgia Public Service Commission (Docket No. 10767-U), on behalf of BellSouth Telecommunications, rebuttal testimony regarding intercarrier compensation for Internet-bound traffic, filed October 25, 1999.
78. Georgia Public Service Commission (Docket No. 10854-U), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed November 15, 1999, rebuttal testimony filed November 22, 1999.
79. Georgia Public Service Commission (Docket No. 7892-U), on behalf of BellSouth Telecommunications, rebuttal testimony regarding implementation of service quality standards, filed June 27, 2000.
80. CPR Institute for Dispute Resolution Arbitral Tribunal, Rebuttal Affidavit in Arbitrations III and IV between BellSouth Telecommunications and Supra Telecommunications & Information Systems. Filed November 5, 2001.
81. Georgia Public Service Commission (Docket No. 11901-U) on behalf of BellSouth Telecommunications, Inc., regarding the provision of DSL service to competitors' voice customers. Rebuttal testimony filed November 8, 2002.

*Idaho*

82. Idaho Public Utilities Commission (Case No. GST-T-99-1), on behalf of US West Communications, Inc., direct testimony regarding intercarrier compensation for ISP-bound traffic, November 22, 1999, rebuttal testimony filed December 2, 1999.

*Illinois*

83. Illinois Commerce Commission (Docket No. 88-0412) on behalf of Illinois Bell Telephone Company: analysis of pricing issues for public telephone service. Filed August 3, 1990. Surrebuttal testimony filed December 9, 1991.

84. United States Bankruptcy Court, Northern District of Illinois, Eastern Division Telesphere Liquidating Trust vs. Francesco Galesi, Adv. Proc. Nos. 95 A 1051 & 99 A 131: expert opinion regarding the condition of alternative operator service provider and 900 service markets. Report filed August 23, 2002.

*Iowa*

85. Iowa Utilities Board, on behalf of US West Inc. & Qwest Communications Intl, Inc., rebuttal testimony regarding public interest effects of the proposed merger, filed December 23, 1999.

*Kentucky*

86. Kentucky Public Service Commission on behalf of South Central Bell Telephone Company, testimony concerning telecommunications productivity growth and price cap plans, April 18, 1995.

87. Kentucky Public Service Commission (Administrative Case No. 96-608) on behalf of BellSouth Long Distance, Inc., testimony regarding the economic effects of BellSouth entry into interLATA services. Filed April 14, 1997. Rebuttal testimony filed April 28, 1997, supplemental rebuttal testimony filed August 15, 1997.

88. Kentucky Public Service Commission (Docket No. 98-292), on behalf of Cincinnati Bell Telephone Company, direct testimony regarding proposed price regulation plan containing earnings sharing requirements. Filed April 5, 1999.

89. Kentucky Public Service Commission (Docket No. 99-218), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 21, 1999. Rebuttal testimony filed November 19, 1999.

90. Kentucky Public Service Commission (Docket No. 99-296), on behalf of GTE & Bell Atlantic, direct testimony on the effects of the Bell Atlantic-GTE merger on competition in Kentucky and on the benchmarking abilities of regulators. Filed July 9, 1999, rebuttal testimony filed August 20, 1999.

91. Kentucky Public Service Commission (Docket No. 2001-105), on behalf of BellSouth Telecommunications, Inc.: local competition in Kentucky and BellSouth's performance measurements plan to support its application for interLATA authority. Rebuttal testimony filed July 30, 2001. Surrebuttal testimony filed September 10, 2001.

*Louisiana*

92. Louisiana Public Service Commission (Docket No. U-17949, Subdocket E) on behalf of South Central Bell Telephone Company, rebuttal testimony concerning productivity growth accounting and other aspects of a price regulation plan, July 24, 1995.

93. Louisiana Public Service Commission (Docket No. U-17949, Subdocket E) on behalf of South Central Bell Telephone Company, supplemental and rebuttal testimony concerning

economic issues in depreciation accounting in the presence of competition and price cap regulation, November 17, 1995. Surrebuttal testimony, December 13, 1995, Further Surrebuttal testimony, January 12, 1996.

94. Louisiana Public Service Commission (Docket No. U-20883) on behalf of South Central Bell Telephone Company, "Price Regulation and Local Competition in Louisiana," affidavit evaluating a framework for local competition and price regulation in Louisiana, November 21, 1995.

95. Louisiana Public Service Commission (Docket No. U-20883, Subdocket A) on behalf of South Central Bell Telephone Company, rebuttal testimony concerning methods for measuring the cost of providing universal service, August 16, 1995.

96. Louisiana Public Service Commission (Docket No. U-U-22020) on behalf of South Central Bell Telephone Company, testimony concerning economic principles determining wholesale prices for resold services. Filed August 30 1996. Rebuttal testimony filed September 13, 1996.

97. Louisiana Public Service Commission, on behalf of BellSouth Long Distance, Inc. (Docket No. U-22252), direct testimony regarding the probable economic benefits to consumers in Louisiana from entry by BellSouth into the interLATA long distance market. Filed March 14, 1997. Rebuttal testimony filed May 2, 1997. Supplemental testimony filed May 27, 1997.

98. Louisiana Public Service Commission (Docket No. U-24206), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed September 3, 1999, rebuttal filed September 17, 1999.

99. Louisiana Public Service Commission (Docket No. U-22632) on behalf of BellSouth Telecommunications, rebuttal testimony concerning payphone access services, July 17, 2000.

100. Louisiana Public Service Commission (Docket No. U-22252, Subdocket E), on behalf of BellSouth Telecommunications, economic properties of service quality penalty plans. Reply affidavit filed June 25, 2001.

101. United States District Court, Eastern District of Louisiana, Civil Action No. 02-0481: *Dwayne P. Smith, Trustee v. Lucent Technologies, Inc.*, on behalf of Lucent Technologies, Inc., damage calculation from alleged equipment failure. Expert Report filed June 16, 2003.

#### **Maine**

102. State of Maine Public Utilities Commission (Docket No. 89-397) on behalf of New England Telephone & Telegraph Company: theoretical and historical analysis of incentive regulation in telecommunications, entitled "Incentive Regulation in Telecommunications," filed June 15, 1990.

103. State of Maine Public Utilities Commission (Docket Nos. 94-123/94-254) on behalf of New England Telephone & Telegraph Company: analysis of appropriate parameters for a price regulation plan. Filed December 13, 1994. Rebuttal testimony filed January 13, 1995.

104. Maine Public Utilities Commission (Docket No. 96-388) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX, Direct Testimony filed September 6, 1996. Rebuttal Testimony filed October 30, 1996.

105. Maine Public Utilities Commission (Docket No. 97-505) on behalf of NYNEX: direct testimony regarding economic principles for setting prices and estimating costs for interconnection. Filed April 21, 1997. Rebuttal testimony filed October 21, 1997.

106. Maine Public Utilities Commission on behalf of NYNEX: affidavit regarding competitive effects of NYNEX entry into interLATA markets. Filed May 27, 1997 (with Kenneth Gordon, Richard Schmalensee and Harold Ware).

107. Maine Public Utilities Commission (Docket No. 99-851) on behalf of Verizon: direct testimony regarding the review of Maine's alternative regulation plan. Filed January 8, 2001.

Rebuttal filed February 12, 2001.

108. Maine Public Utilities Commission (Docket No. 99-851), on behalf of Verizon- Maine, affidavit regarding economics pf price cap regulation. Filed April 29, 2003.

*Maryland*

109. Maryland Public Service Commission (Case No. 8462) on behalf of The Chesapeake and Potomac Telephone Company of Maryland: competition and the appropriate regulatory treatment of Yellow Pages. Filed October 2, 1992.

110. Maryland Public Service Commission (Case No. 8584) on behalf of The Chesapeake and Potomac Telephone Company of Maryland: appropriate pricing and regulatory treatment of interconnection to permit competition for local service. Filed November 19, 1993, (with A.E. Kahn). Rebuttal testimony filed January 10, 1994, surrebuttal testimony filed January 24, 1994.

111. Maryland Public Service Commission (Case No. 8584, Phase II) on behalf of Bell Atlantic - Maryland: geographically deaveraged incremental and embedded costs of service. Filed December 15, 1994. Additional direct testimony concerning efficient rate structures for interconnection pricing filed May 5, 1995. Rebuttal testimony filed June 30, 1995.

112. Maryland Public Service Commission (Case No. 8659) on behalf of Bell Atlantic - Maryland: appropriate pricing of interconnection among competing local exchange carriers. Filed November 9, 1994.

113. *FreBon International Corp. vs. BA Corp. Civil Action*, No. 94-324 (GK): Defendants' Amended Expert Disclosure Statement, regarding markets for teleconferencing services. Filed under seal February 15, 1996.

114. Maryland Public Service Commission (Case No. 8715), on behalf of Bell Atlantic - Maryland: rebuttal testimony on the economic criteria for the reclassification of telecommunications services. Filed March 14, 1996, surrebuttal testimony filed April 1, 1996.

115. Maryland Public Service Commission, on behalf of Bell Atlantic-Maryland, (Case No. 8731-II), statement regarding costing and pricing of interconnection and unbundled network elements. Filed January 10, 1997. Rebuttal testimony filed April 4, 1997.

116. Maryland Public Service Commission, on behalf of Bell Atlantic - Maryland: statement regarding consumer benefits from Bell Atlantic's provision of interLATA service, filed March 14, 1997.

117. Maryland Public Service Commission (Case No. 8786), on behalf of Bell Atlantic - Maryland: rebuttal testimony regarding economic principles underlying costs and prices for non-recurring services and access to operations support systems. Filed November 16, 1998.

118. Maryland Public Service Commission (Case No. 8745), direct testimony on behalf of Verizon Maryland Inc. regarding efficient pricing of carrier access charges. Filed March 23, 2001. Rebuttal filed May 21, 2001. Surrebuttal filed June 11, 2001.

119. Before the Public Service Commission of Maryland (Case No. 8879), direct testimony on behalf of Verizon Maryland Inc. regarding costing principles for network elements. Filed May 25, 2001. Rebuttal testimony filed September 5, 2001. Surrebuttal filed October 15, 2001.

120. Circuit Court For Prince George's County, Maryland. Case No: CAL 99-21004, Jacqueline Dotson, et al. v. Bell Atlantic - Maryland, Inc. and Maryland Public Service Commission, affidavit on behalf of Bell Atlantic Maryland regarding late payment fees. Filed October 14, 2002.

121. Maryland Public Service Commission (Case No. 8927), on behalf of Verizon Maryland, rebuttal testimony regarding complaint by CloseCall America alleging anti-competitive tying of Verizon's residential and small business local service with voice messaging and high-speed Internet access, filed September 24, 2002. Supplemental rebuttal testimony filed March 3, 2003.

Surrebuttal testimony filed April 11, 2003.

*Massachusetts*

122. Massachusetts Department of Public Utilities (Docket No. D.P.U. 94-50), on behalf of NYNEX: analysis of appropriate parameters for a price regulation plan. Filed April 14, 1994. Rebuttal testimony filed October 26, 1994.
123. Massachusetts Department of Public Utilities (Docket No. D.P.U. 94-185) on behalf of NYNEX: economic analysis of terms and conditions for efficient local competition. Filed May 19, 1995. Rebuttal testimony filed August 23, 1995.
124. Affidavit to the Superior Court Department of the Trial Court (Civil Action No. 95-6363F), on behalf of New England Telephone and Telegraph Company, d/b/a NYNEX: in opposition to Plaintiffs' Motion for Class Certification. Filed July 1996.
125. Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94) on behalf of NYNEX: economic analysis of costs avoided from resale of local exchange services. Testimony filed September 27, 1996. Rebuttal Testimony filed October 16, 1996.
126. Massachusetts Department of Public Utilities (Docket Nos. D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94) on behalf of NYNEX: Arbitration of interconnection agreements under the Telecommunications Act of 1996. Filed October 11, 1996. Rebuttal Testimony filed October 30, 1996.
127. Massachusetts Department of Public Utilities (Docket No. DTE 98-15), on behalf of Bell Atlantic – MA: direct testimony regarding the method used to determine wholesale (avoided cost) discount that applies to resold retail services. Filed January 16, 1998.
128. Massachusetts Department of Public Utilities (Docket No. D.P.U./D.T.E. 94-185-C) on behalf of Bell Atlantic: economic analysis of the usefulness of a regulatory price floor for wholesale services. Affidavit filed February 6, 1998. Reply Affidavit filed February 19, 1998.
129. Massachusetts Department of Telecommunications and Energy (D.P.U. 96-3/74, 96-75, 96-80/81, 96-83, & 96-94), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony discussing the types of costs for OSSs, filed April 29, 1998.
130. Massachusetts Department of Telecommunications and Energy (Docket No. 85-15, Phase III, Part 1), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony discussing appropriate forward-looking technology for costing network elements, filed August 31, 1998.
131. Massachusetts Department of Telecommunications and Energy (Docket No. 98-15, Phase II), on behalf of Bell Atlantic – Massachusetts: rebuttal testimony concerning the avoided costs of resold services, filed September 8, 1998.
132. Massachusetts Department of Telecommunications and Energy (Docket No. 98-67), on behalf of Bell Atlantic-Massachusetts: direct testimony regarding regulatory rules/economic principles pertaining to exogenous adjustment factors in Bell Atlantic's price cap formula, filed September 25, 1998.
133. Massachusetts Department of Telecommunications and Energy (Docket No. 98-85), on behalf of Bell Atlantic-Massachusetts: direct testimony regarding efficiency changes from intraLATA presubscription, filed October 20, 1998.
134. Massachusetts Department of Telecommunications and Energy (Docket No. D.T.E. 97-116-B), on behalf of Bell Atlantic-Massachusetts, affidavit regarding consequences for economic efficiency of different intercarrier compensation rules for ISP-bound traffic. Filed March 29, 1999.
135. Massachusetts Department of Telecommunications & Energy (Docket No. 94-185-E), on behalf of Bell Atlantic, rebuttal testimony re: inclusion of overhead costs in the calculation of

price floors for BA-MA services. Filed July 26, 1999.

136. Massachusetts Department of Telecommunications and Energy (Docket DTE -1-20), on behalf of Verizon New England Inc., D/B/A/ Verizon Massachusetts, direct testimony regarding cost concepts and pricing principals for UNEs, filed May 4, 2001. Rebuttal testimony filed December 17, 2001.

137. Massachusetts Department of Telecommunications and Energy, testimony on behalf of Verizon New England Inc. d/b/a/ Verizon Massachusetts, regarding benefits of alternative regulation in Massachusetts since adoption of price cap plan.. Filed April 12, 2001. Rebuttal testimony filed September 21, 2001. Reply filed November 14, 2001.

#### *Michigan*

138. Testimony before the Michigan Circuit Court (Case No. 87-709234-CE and 87-709232-CE) on behalf of Combustion Engineering, Inc., in *Her Majesty the Queen, et al., v. Greater Detroit Resource Recovery Authority, et al.*, re statistical analysis of air pollution data to determine emissions limits for the Detroit municipal waste-to-energy facility, February, 1992.

139. Michigan Public Service Commission (Case No. U-11756), on behalf of Ameritech Michigan: direct testimony regarding efficient prices for services supplied to independent phone payers, filed October 9, 1998.

#### *Minnesota*

140. Minnesota Public Utilities Commission (Docket No. P3009, 3052, 5096, 421, 3017/PA-99-1192), on behalf of US WEST Communications, Inc., rebuttal affidavit regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed January 14, 2000.

141. Minnesota Public Utilities Commission (Docket No. P3009, 3052, 5096, 421, 3017/PA-99-1192), direct testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed March 29, 2000.

142. Minnesota Public Utilities Commission (PUC Docket No. P-421/C1-01-1372, OAH Docket No. 7-2500-14487-2) on behalf of Qwest Corporation, economic aspects of separate affiliate requirements, affidavit filed December 28, 2001, Surrebuttal Affidavit filed January 16, 2002.

#### *Mississippi*

143. Mississippi Public Service Commission (Docket No. 95-UA-313) on behalf of BellSouth Telecommunications, Inc. d/b/a South Central Bell Telephone Company, rebuttal testimony addressing cost issues, as they pertain to price regulation raised in the direct testimony by intervenors. Filed October 13, 1995.

144. Mississippi Public Service Commission (Docket No. 95-UA-358) on behalf of BellSouth Telecommunications, Inc. d/b/a South Central Bell Telephone Company, testimony regarding universal service fund issues. Filed January 17, 1996. Rebuttal testimony filed February 28, 1996.

145. Mississippi Public Service Commission (Docket No. 97-AD-0321), on behalf of BellSouth Long Distance, Inc., direct testimony regarding the likely economic benefits to consumers in Mississippi from entry by BellSouth into the interLATA long distance market. Filed July 1, 1997. Rebuttal testimony filed September 29, 1997.

146. Mississippi Public Service Commission (Docket No. 97-AD-544), on behalf of BellSouth Telecommunications: rebuttal testimony regarding economic issues of costing and pricing

unbundled network elements. Filed March 13, 1998.

147. Mississippi Public Service Commission (Docket No. 98-AD-035), on behalf of BellSouth Telecommunications: direct testimony regarding universal service funding and price benchmark issues. Filed February 23, 1998, rebuttal testimony filed March 6, 1998.

148. Mississippi Public Service Commission (Docket No. 99-AD-421), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 20, 1999. Rebuttal testimony filed November 12, 1999.

149. Mississippi Public Service Commission (Docket No. 97-AD-321), on behalf of BellSouth Telecommunications, Inc.: local competition in Mississippi and BellSouth's performance measurements plan to support its application for interLATA authority. Rebuttal testimony filed August 2, 2001.

#### *Montana*

150. Montana Public Service Commission (Docket No. 90.8.46) on behalf of US West Communications: theoretical and historical analysis of incentive regulation plans in telecommunications. Filed October 4, 1990.

151. Montana Public Service Commission (Docket No. 90.12.86) on behalf of US West Communications: economic analysis of a proposed incentive regulation plan. Filed November 4, 1991. Additional testimony filed January 15, 1992.

152. Montana Public Service Commission (Docket No. D99.8.200), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 22, 2000.

153. Montana Department of Public Service Regulation (Docket No. D2000.6.89), on behalf of US West Communications, Inc., direct testimony regarding efficient intercarrier compensation for Internet-bound traffic. Filed July 24, 2000. Rebuttal testimony filed February 7, 2001.

154. Montana Department of Public Service Regulation (Docket No. D2000.8.124), on behalf of Qwest Corporation., direct testimony in arbitration with TouchAmerica regarding efficient intercarrier compensation for Internet-bound traffic. Filed October 20, 2000. Rebuttal testimony filed December 20, 2000.

155. Montana Public Service Commission (Docket No. D2002.12.153) on behalf of Qwest Long Distance Corp.: rebuttal testimony regarding alleged anticompetitive practices in long distance services. Filed July 18, 2003.

#### *Nebraska*

156. Nebraska Public Service Commission, on behalf of US WEST, (Application No. C-1628), economic analysis of local exchange and exchange access pricing, direct testimony filed October 20, 1998; reply testimony filed November 20, 1998.

157. Nebraska Public Service Commission, *In the Matter of the Petition of Sprint Communications Company L.P. for Arbitration of Interconnection Rates, Terms, Conditions, and Related Arrangements with U S WEST Communications, Inc. N/K/A Qwest Corporation*, (Docket No. C-2328), Direct testimony regarding intercarrier compensation for Internet-bound traffic filed September 25, 2000. Rebuttal testimony filed October 4, 2000.

#### *Nevada*

158. United States District Court, District of Nevada (Case No. CV-S-99-1796-KJD(RJJ) on behalf of Broadwing Communications Services, Inc., affidavit regarding damages from alleged



misuse of trade secret information. Filed December 28, 2000.

*New Hampshire*

159. New Hampshire Public Service Commission (Docket 89-010)) on behalf of New England Telephone & Telegraph Company: appropriate level and structure of productivity adjustments in a proposed price regulation plan. Filed March 3, 1989.
160. New Hampshire Public Service Commission, (Docket DE 90-002), on behalf of New England Telephone & Telegraph Company: the appropriate relationship between carrier access and toll prices. Filed May 1, 1992. Reply testimony filed July 10, 1992. Rebuttal testimony filed August 21, 1992.
161. Science, Technology and Energy Committee of the New Hampshire House of Representatives on behalf of New England Telephone Company, "An Economic Perspective on New Hampshire Senate Bill 77," an analysis of resale of intraLATA toll services. April 6, 1993
162. New Hampshire Public Service Commission, (Docket DE 96-252) on behalf of NYNEX: economic analysis of costs avoided from resale of local exchange services. Filed October 1, 1996.
163. New Hampshire Public Service Commission (Docket DE 96-220) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed October 10, 1996.
164. New Hampshire Public Service Commission, (Docket DE 96-252) on behalf of NYNEX: Arbitration of interconnection agreements under the Telecommunications Act of 1996. Filed October 23, 1996.
165. New Hampshire Public Service Commission (Docket No. 97-171, Phase II), on behalf of Bell Atlantic – New Hampshire: direct testimony discussing the basic economic principles regarding costs and prices of interconnection and unbundled network elements, filed March 13, 1998. Rebuttal filed April 17, 1998.
166. New Hampshire Public Utilities Commission (Docket No. 99-018), on behalf of Bell Atlantic, direct testimony regarding the use of Total Element Long Run Incremental Cost (TELRIC) methodology as the basis for prices in special contracts. Filed April 7, 1999. Rebuttal testimony filed April 23, 1999.
167. New Hampshire Public Utilities Commission (Docket No. DT 02-111) on behalf of Verizon – New Hampshire, rebuttal testimony regarding private line pricing. Filed May 2, 2003.
168. New Hampshire Public Utilities Commission (Docket No. DT 02-165) on behalf of Verizon – New Hampshire, rebuttal testimony regarding Yellow Pages revenue imputation. Filed June 4, 2003.

*New Jersey*

169. New Jersey Board of Public Utilities (Docket No. TX90050349) on behalf of New Jersey Bell Telephone Company: theoretical and empirical analysis of the Board's intraLATA compensation policy. Filed December 6, 1990.
170. New Jersey Board of Regulatory Commissioners, (Docket No. TX93060259), Affidavit analyzing statistical evidence regarding the effect of intraLATA competition on telephone prices. Filed October 1, 1993.
171. New Jersey Board of Public Utilities (Docket Nos. TX90050349, TE92111047, TE93060211) on behalf of Bell Atlantic-New Jersey: economic impacts of intraLATA toll competition and regulatory changes required to accommodate competition. Filed April 7, 1994. Rebuttal testimony filed April 25, 1994. Summary Affidavit and Technical Affidavit filed April

19, 1994.

172. New Jersey Board of Public Utilities (Docket No. TX94090388) on behalf of Bell Atlantic - New Jersey: economic analysis of issues regarding proposed presubscription for intraLATA toll traffic in New Jersey. Amended direct testimony filed April 17, 1995. Rebuttal Testimony filed May 31, 1995.

173. New Jersey Board of Public Utilities on behalf of Bell Atlantic - New Jersey: "Economic Competition in Local Exchange Markets," position paper on the economics of local exchange competition filed in connection with arbitration proceedings, August 9, 1996 (with Kenneth Gordon and Alfred E. Kahn).

174. New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey, incremental costs of residential basic exchange service. Filed August 15, 1996. Rebuttal testimony filed August 30, 1996.

175. New Jersey Board of Public Utilities (Docket No. TO96070519) on behalf of Bell Atlantic - New Jersey: evaluation of proxy models of the incremental cost of unbundled network elements, testimony filed September 18, 1996.

176. New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey: economic analysis of the avoided costs from resale of local exchange services. Rebuttal testimony filed September 27, 1996.

177. New Jersey Board of Public Utilities (Docket No. T096080621: MCI/Bell Atlantic Arbitration) on behalf of Bell Atlantic-New Jersey. Rebuttal testimony concerning the pricing of unbundled network elements, November 7, 1996.

178. New Jersey Board of Public Utilities on behalf of Bell Atlantic - New Jersey (Docket No. T097030166) economic analysis of costs and benefits from Bell Atlantic provision of interLATA services, statement filed March 3, 1997, reply affidavit filed May 15, 1997.

179. New Jersey Board of Public Utilities (Docket No. TX95120631) on behalf of Bell Atlantic - New Jersey: economic analysis of proposed universal service funds. Direct testimony filed September 24, 1997. Rebuttal testimony filed October 18, 1997.

180. New Jersey Board of Public Utilities (BPU Docket No. TO97100808, OAL Docket No. PUCOT 11326-97N) on behalf of Bell Atlantic - New Jersey: economic analysis of imputation rules for long distance services. Direct testimony filed July 8, 1998, rebuttal testimony filed September 18, 1998.

181. The New Jersey Board of Public Utilities (OAL DOCKET Nos. PUCOT 11269-97N, PUCOT 11357-97N, PUCOT 01186-94N AND PUCOT 09917-98N) on behalf of Bell Atlantic - New Jersey: economic issues regarding alleged subsidization of payphone services. Rebuttal testimony filed March 8, 1999; surrebuttal testimony filed June 21, 1999.

182. New Jersey Board of Public Utilities (Docket No. TO 00031063), on behalf of Bell Atlantic-New Jersey, direct testimony regarding the measurement of economic costs of ISP-bound traffic and economic issues concerning intercarrier compensation for such traffic. Filed April 28, 2000. Rebuttal testimony filed May 5, 2000.

183. New Jersey Board of Public Utilities (Docket No. TO 99120934), on behalf of Bell Atlantic-New Jersey, direct testimony regarding reclassification of services as competitive. Filed May 18, 2000.

184. New Jersey Board of Public Utilities (Docket No. TO00060356), on behalf of Bell Atlantic-New Jersey, affidavit regarding the measurement of economic costs for unbundled network elements. Filed July 28, 2000.

185. The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding parameters in an incentive regulation plan. Filed February 15, 2001. Rebuttal filed June 15, 2001. Supplemental rebuttal filed September 25, 2001.

186. The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding measurement of cross-subsidies. Filed February 15, 2001. Rebuttal filed June 15, 2001.

187. The New Jersey Board of Public Utilities (Docket No. TO01020095), on behalf of Verizon-New Jersey, panel testimony regarding reclassification of business services as competitive. Filed February 15, 2001. Rebuttal filed June 15, 2001.

188. New Jersey Board of Public Utilities (Docket No. TT97120889), on behalf of Verizon – New Jersey, updated rebuttal testimony (with Michael Falkiewicz) regarding reclassification of directory assistance services as competitive, filed February 13, 2003.

#### *New Mexico*

189. New Mexico Public Regulation Commission (Case No. 3131), On behalf of U S WEST Communications, direct testimony regarding intercarrier compensation for Internet-bound traffic, filed October 14, 1999. Rebuttal testimony filed October 18, 1999.

190. New Mexico Public Regulation Commission (Utility Case No. 3147), on behalf of US West Communications, Inc., direct testimony regarding efficient pricing and policies towards investment and new service implementation, filed December 6, 1999, rebuttal testimony filed December 28, 1999.

191. New Mexico Public Regulation Commission, on behalf of US West Communications, Inc., direct testimony regarding pricing flexible and alternatives to rate of return regulation, filed December 10, 1999.

192. New Mexico Public Regulation Commission (Case No. 3008), On behalf of U S WEST Communications, rebuttal testimony regarding local exchange rate levels and structure, filed May 19, 2000.

193. New Mexico Public Regulation Commission (Case No. 3225), on behalf of Qwest Corporation, direct testimony regarding the subsidy in existing telephone rates. Filed August 18, 2000.

194. New Mexico Public Regulation Commission (Case No. 3300), on behalf of Valor Telecommunications of New Mexico, LLC, rebuttal testimony regarding the subsidy in existing telephone rates. Filed October 19, 2000.

#### *New York*

195. New York State Public Service Commission (Case 28961 - Fifth Stage) on behalf of New York Telephone Company: appropriate level and structure of productivity adjustments in a proposed price regulation plan. Filed September 15, 1989.

196. Testimony before the United States District Court, Eastern District of New York on behalf of Jancyn Manufacturing Corp., in *Jancyn Manufacturing Corp. v. The County of Suffolk*. Commercial damages. Depositions: September 19, 1991, November 22, 1993; Testimony and Cross-Examination: January 11, 1994.

197. New York Public Service Commission (Case No. 28425) on behalf of New York Telephone Company, “Costs and Benefits of IntraLATA Presubscription,” (with T.J. Tardiff). Filed May 1, 1992.

198. New York State Public Service Commission (Case 92-C-0665, Proceeding on Motion of the Commission to Investigate Performance-Based Incentive Regulatory Plans for New York Telephone Company) on behalf of New York Telephone Company: appropriate level and structure of productivity adjustments and competitive pricing safeguards in a proposed incentive regulation plan. Filed as part of panel testimony, October 3, 1994.

199. New York Public Service Commission (Case 94-C-0017) on behalf of New York Telephone Company, testimony regarding competition and market power in intrastate toll markets. Filed August 1, 1995.
200. New York Public Service Commission (Case Nos. 95-C-0657, 94-C-0095, 91-C-1174) on behalf of New York Telephone Company, costing principles for resold services. Filed May 31, 1996. Costing and pricing principles for unbundled network elements. Filed June 4, 1996. Rebuttal testimony filed July 15, 1996.
201. New York Public Service Commission (Case Nos. 93-C-0451 and 91-C-1249) on behalf of New York Telephone Company, statistical issues in the calculation of damages in the provision of Mass Announcement Services: Rebuttal testimony filed July 23, 1996.
202. New York Public Service Commission (Case 96-C-0603) on behalf of NYNEX and Bell Atlantic, *Initial Panel Testimony*, regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed November 25, 1996. *Reply Panel Testimony* filed December 12, 1996.
203. Affidavit to the U.S. District Court, Southern District of New York, on behalf of Multi Communication Media Inc., *Multi Communications Media Inc., v. AT&T and Trevor Fischbach*, (96 Civ. 2679 (MBM)) regarding the application of the filed tariff doctrine to contract tariffs in telecommunications. Filed December 27, 1996.
204. New York Public Service Commission on behalf of New York Telephone Company, "Competitive Effects of Allowing NYNEX To Provide InterLATA Services Originating In New York State," public interest analysis of NYNEX's proposed entry into in-region long distance service. Filed February 18, 1997 (with Harold Ware and Richard Schmalensee).
205. State of New York Public Service Commission (Case 94-C-0095 and 28425), on behalf of NYNEX, *Initial Panel Testimony*: direct testimony regarding InterLATA Access Charge Reform. Filed May 8, 1997. *Rebuttal Panel Testimony* filed July 8, 1997.
206. State of New York Public Service Commission (Cases 95-C-0657, 94-C-0095, 91-C-1174 and 96-C-0036), on behalf of Bell Atlantic, *Panel Testimony of Bell Atlantic – New York on Costs and Rates for Miscellaneous Phase 3 Services*: panel testimony regarding statistical sampling issues in cost studies for non-recurring charges. Filed March 18, 1998. Rebuttal filed June 3, 1998.
207. New York Public Service Commission, (Case 98-C-1357), on behalf of Bell Atlantic-New York, Panel Testimony on costs for wholesale services, Panel Testimony filed February 7, 2000. Panel Rebuttal Testimony filed October 19, 2000.
208. New York Public Service Commission, (Case 00-C-1945), on behalf of Verizon-New York, Panel Testimony on price regulation, filed May 15, 2001.
209. New York Public Service Commission, (Case 00-C-1945), on behalf of Verizon-New York, Panel Testimony on the New York competitive marketplace, filed May 15, 2001.
210. American Arbitration Association, New York, MCI WorldCom Communications Inc. v. Electronic Data Systems, Corporation, Expert Report on prices and incentives in a disputed contract filed June 25, 2001. Supplemental Expert Report filed July 13, 2001.
211. New York Public Service Commission (Case 01-C-0767), on behalf of Verizon-New York, panel testimony regarding incremental costs and pricing of mobile interconnection services. Filed October 31, 2001.
212. New York Public Service Commission, (Case 00-C-1945), economic issues in renewing the New York incentive regulation plan, (panel testimony), filed February 11, 2002.
213. American Arbitration Association, on behalf of Verizon – New York, direct testimony regarding events in telecommunications markets affecting employment. February 2003.
214. American Arbitration Association (Case No: 50-T-180-00458-02), *Global Crossing USA, Inc. v. Softbank Corp.*, on behalf of Softbank Corp., damage calculations regarding

undersea optical fiber capacity. Direct and Supplemental direct testimonies filed July 2003.

*North Carolina*

215. North Carolina Utilities Commission (Docket No. P-7, Sub 825; P-10, Sub 479) on behalf of Carolina Telephone and Telegraph Company and Central Telephone Company, direct and rebuttal testimony regarding price cap regulation for small telephone companies, February 9, 1996.

216. North Carolina Utilities Commission (Docket No. P-55, Sub1022) on behalf of BellSouth Long Distance, Inc.: direct testimony regarding the likely economic benefits to consumers in North Carolina from entry by BellSouth into the interLATA long distance market. Filed August 5, 1997. Rebuttal testimony filed September 15, 1997.

217. North Carolina Utilities Commission (Docket No. P-100, SUB 133d), on behalf of BellSouth Telecommunications: direct testimony on the proper economic basis for determining costs and prices of interconnection, unbundled network elements, and operating support systems. Filed December 15, 1997. Rebuttal filed March 9, 1998.

218. North Carolina Utilities Commission (Docket No. P-100, SUB 133g), on behalf of BellSouth Telecommunications: direct testimony on appropriate economic principles for sizing the state universal service fund. Filed February 16, 1998. Rebuttal filed April 13, 1998.

219. North Carolina Utilities Commission, *In re: Petition for Arbitration of ITC^DELTA COM Communications, Inc., with BellSouth Telecommunications, Inc., Pursuant to the Telecommunications Act of 1996*, (Docket No. P-500, Sub 10), testimony regarding economic interconnection issues, filed July 9, 1999.

220. North Carolina Utilities Commission, *In the Matter of Bell South Telecommunications, Inc., Complainant vs. US LEC of North Carolina, Respondent*, (Docket No. P-561, Sub 10), rebuttal testimony regarding economic efficiency and reciprocal compensation. Filed July 30, 1999.

221. North Carolina Utilities Commission (Docket No. P-100, SUB 133k), on behalf of BellSouth Telecommunications: rebuttal testimony regarding properties of a service quality performance assurance plan. Filed May 21, 2001.

222. North Carolina Utilities Commission (Docket No. P-55, SUB 1022), on behalf of BellSouth Telecommunications: rebuttal testimony regarding status of local competition in North Carolina. Filed October 8, 2001.

*North Dakota*

223. North Dakota Public Service Commission, on behalf of US WEST Communications, rebuttal testimony in support of US WEST's filing for a residential basic local service rate increase, filed May 30, 2000.

*Ohio*

224. The Public Utilities Commission of Ohio (Case No. 94-1695-TP-ACE) on behalf of Cincinnati Bell Telephone Company: economic analysis of terms and conditions for efficient local competition. Filed May 24, 1995.

225. Ohio Public Utility Commission (Case No. 96-899-TP-ALT) on behalf of Cincinnati Bell Telephone Company: direct testimony regarding CBT's proposed rate rebalancing and price regulation plan. Filed February 19, 1997.

226. Ohio Public Utility Commission (Case No. 97-152-TP-ARB), on behalf of Cincinnati

Bell Telephone Company: direct testimony regarding the application of MCI Telecommunications Corporation Petition for Arbitration Pursuant to Section 252 (h) of the Telecommunications Act of 1996. Filed April 2, 1997.

227. Ohio Public Utility Commission (Docket No. 98-1398-TP-AMT), on behalf of Bell Atlantic and GTE, rebuttal testimony concerning economic effects of the proposed merger of Bell Atlantic and GTE. Filed June 16, 1999, substitute rebuttal testimony filed October 12, 1999.

#### *Oregon*

228. Oregon Public Utility Commission (ARB 154) on behalf of US WEST Communications, direct testimony regarding intercarrier compensation for ISP-bound traffic, November 1, 1999, rebuttal testimony filed November 5, 1999.

#### *Pennsylvania*

229. Pennsylvania Public Utility Commission, (Docket No. P-009350715), on behalf of Bell Atlantic: a study of inflation offsets in a proposed price regulation plan. Filed October 1, 1993. Rebuttal testimony filed January 18, 1994.

230. Pennsylvania Public Utility Commission, (Docket No. I-940034) on behalf of Bell Atlantic: issues regarding proposed presubscription for intraLATA toll traffic. Filed as part of panel testimony, December 8, 1994. Reply testimony filed February 23, 1995. Surrebuttal testimony filed March 16, 1995.

231. *US WATS v. AT&T*: Retained by counsel for US WATS, a reseller of AT&T long distance services, plaintiff in an antitrust suit alleging monopolization and conspiracy in business long distance markets. Antitrust liability and damages. Confidential Report, August 22, 1995. Depositions September 30, October 1, October 12, December 3, 1995. Testimony October 18-20, 25-27, 30, 1995. Rebuttal testimony December 4, December 11, 1995.

232. Pennsylvania Public Utility Commission (Docket Nos. A-310203F0002, A-310213F0002, A-310236F0002 and A-310258F0002), on behalf of Bell Atlantic - Pennsylvania: rebuttal testimony to evaluate costing and pricing principles and cost models. Filed March 21, 1996.

233. Pennsylvania Public Utility Commission (Docket No. P-00961024), on behalf of Commonwealth Telephone Company: economic appraisal of a price cap regulation proposal, Direct testimony filed April 15, 1996. Rebuttal testimony filed July 19, 1996.

234. Pennsylvania Public Utility Commission (Docket No. R-00963550), on behalf of Bell Atlantic - Pennsylvania: economic consequences of rate rebalancing, Direct testimony filed April 26, 1996. Rebuttal testimony filed July 5, 1996.

235. Pennsylvania Public Utility Commission (Docket No. R-963550 C0006), on behalf of Bell Atlantic - Pennsylvania: economic consequences of rate rebalancing, Direct testimony filed August 30, 1996.

236. Pennsylvania Public Utility Commission (Docket No. A-310258F0002 - Interconnection Arbitration, Eastern Telelogic Corporation/Bell Atlantic) on behalf of Bell Atlantic-Pennsylvania, direct and rebuttal testimony on economic costs of interconnection and unbundled network elements, September 23, 1996.

237. Pennsylvania Public Utility Commission, on behalf of Bell Atlantic-Pennsylvania, statement regarding costs and benefits from Bell Atlantic entry into interLATA telecommunications markets. Filed February 10, 1997. Rebuttal testimony filed March 21, 1997.

238. Pennsylvania Public Utility Commission (Docket No. I-00960066), on behalf of Bell Atlantic: direct testimony providing an economic framework for the intrastate carrier switched

access rates charged by Bell Atlantic. Filed June 30, 1997. Rebuttal testimony filed July 29, 1997. Surrebuttal testimony filed August 27, 1997.

239. Pennsylvania Public Utility Commission (Docket No. I-00940035), on behalf of Bell Atlantic: direct testimony regarding the relationship between access charge reform and universal service funding. Filed October 22, 1997.

240. Pennsylvania Public Utility Commission (Docket No. P-00971307), on behalf of Bell Atlantic: direct testimony concerning the classification of Bell Atlantic's business services in Pennsylvania as competitive and the calculation of an imputation price floor for those services. Filed February 11, 1998. Rebuttal filed February 18, 1998.

241. Pennsylvania Public Utility Commission (Docket No. P-00981410), on behalf of The United Telephone Company of Pennsylvania: direct testimony regarding role of productivity offset in a price cap plan, filed October 16, 1998. Rebuttal testimony filed February 4, 1999.

242. Pennsylvania Public Utility Commission, on behalf of Bell Atlantic-Pennsylvania: A report entitled "Promises Fulfilled; Bell Atlantic-Pennsylvania's Infrastructure Development." Filed January 15, 1999 (with Charles J. Zarkadas, Agustin J. Ros, and Jaime C. d'Almeida).

243. Pennsylvania Public Utility Commission (Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003), on behalf of Bell Atlantic Corporation and GTE Corporation, rebuttal testimony regarding economic issues raised in the proposed merger of Bell Atlantic and GTE. Filed April 22, 1999.

244. Pennsylvania Public Utility Commission (Docket No. A-310630F0002), on behalf of Bell Atlantic, direct testimony regarding the measurement of economic costs of ISP-bound traffic and economic issues concerning intercarrier compensation for such traffic. Filed April 14, 2000. Rebuttal testimony filed April 21, 2000.

245. Pennsylvania Public Utility Commission, (Docket No. M-00001435) on behalf of Verizon-Pennsylvania, Inc.: affidavit regarding the public interest benefits of Verizon entry into interLATA services. Filed January 8, 2001.

246. Pennsylvania Public Utility Commission (Docket No. P-00981449), on behalf of Verizon North, testimony regarding parameters in a Chapter 30 price cap plan. Filed October 31, 2000. Rebuttal testimony filed February 20, 2001.

247. Pennsylvania Public Utility Commission, (Docket No. P-00032020), on behalf of Commonwealth Telephone Company. Affidavit regarding exogenous events in price cap plans. Filed February 3, 2003.

248. Pennsylvania Public Utility Commission, (Docket No. P-00930715F0002), on behalf of Verizon – Pennsylvania. Rebuttal testimony regarding broadband development and productivity growth in the context of a price cap plan. Filed February 4, 2003.

249. Pennsylvania Public Utility Commission on behalf of Verizon-PA Inc. and Verizon North Inc., surrebuttal testimony (proprietary) to support Verizon-PA rate rebalancing plan. Filed August 4, 2003.

#### *Rhode Island*

250. Rhode Island Public Utilities Commission (Docket No. 1997) on behalf of New England Telephone & Telegraph Company, "Rhode Island Price Regulation Plan," analysis of proposed price regulation plan and evidence of the effects of incentive regulation on prices and infrastructure development. Filed September 30, 1991.

251. Rhode Island Public Utilities Commission on behalf of NYNEX (Docket No. 2252), testimony addressing the economic conditions under which competition in the local exchange and intraLATA markets will bring benefits to customers. Direct testimony, November 17, 1995.

252. Rhode Island Public Utilities Commission (Docket No. 2370), on behalf of New England

Telephone and Telegraph Company, D/B/A NYNEX: economic review and revision of the Rhode Island price cap plan. Direct testimony, February 23, 1996. Rebuttal testimony filed June 25, 1996.

253. Rhode Island Public Utilities Commission, on behalf of Bell Atlantic – Rhode Island: direct testimony discussing basic economic principles regarding costs and prices of interconnection and unbundled network elements. Filed November 25, 1997.

254. Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic-Rhode Island: rebuttal testimony regarding costs for OSSs, filed September 18, 1998.

255. Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic: rebuttal testimony regarding entry into the local services telecommunications market. Filed January 15, 1999.

256. Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Bell Atlantic Rhode Island, direct testimony regarding incremental costs and switched access rates. Filed October 22, 1999.

257. Rhode Island Public Utilities Commission (Docket No. 2681), on behalf of Verizon Rhode Island, direct testimony regarding incremental costs and switched access rates. Filed May 1, 2002.

258. Rhode Island Public Utilities Commission (Docket No. 3179), on behalf of Verizon Rhode Island, direct testimony regarding alternative regulation. Filed July 1, 2002. Rebuttal Testimony filed October 22, 2003.

#### *South Carolina*

259. South Carolina Public Service Commission, on behalf of BellSouth Long Distance, Inc., (Docket No. 97-101-C) : direct testimony regarding the probable economic benefits to consumers in South Carolina from entry by BellSouth into the interLATA long distance market. Filed April 1, 1997. Rebuttal testimony filed June 30, 1997.

260. South Carolina Public Service Commission (Docket No. 97-374-C), on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony concerning general economic principles for the pricing and costing of interconnection and unbundled network elements. Filed November 25, 1997.

261. South Carolina Public Service Commission (Docket No. 97-124-C), on behalf of BellSouth Telecommunications, Inc.: rebuttal testimony concerning economic principles for pricing interconnection services supplied to payphone providers. Filed December 7, 1998.

262. South Carolina Public Service Commission, *In re: Petition for Arbitration of ITC^DELTA COM Communications, Inc., with BellSouth Telecommunications, Inc., Pursuant to the Telecommunications Act of 1996*, (Docket No. 1999-259-C), on behalf of BellSouth Telecommunications, testimony regarding economic interconnection issues. Filed August 25, 1999.

263. South Carolina Public Service Commission (Docket No. 2001-209-C), on behalf of BellSouth Telecommunications, Inc.: economic aspects of BellSouth's application to provide long distance services in South Carolina. Rebuttal testimony filed July 16, 2001.

264. South Carolina Public Service Commission (Docket No. 2001-209-C), on behalf of BellSouth Telecommunications, Inc.. Direct testimony regarding statistical issues in performance penalty plans, filed March 5, 2003.

265. Public Service Commission of South Carolina, Docket Nos. 2002-367-C and 2002-408-C on behalf of BellSouth Telecommunications, Inc.. Economic interpretation of "abuse of market position" and "inflation-based index" in legislation. Direct testimony filed July 23, 2003, Responsive testimony filed July 30, 2003.



*Tennessee*

266. Tennessee Public Service Commission (*In re: The Promulgation of Agency Statements of General Applicability to Telephone Companies That Prescribe New Policies and Procedures for Their Regulation*) on behalf of South Central Bell Telephone Company: theoretical analysis and appraisal of the proposed Tennessee Regulatory Reform Plan. Filed February 20, 1991.
267. Tennessee Public Service Commission (Docket No. 95-02499) on behalf of BellSouth Telecommunications, Inc. d/b/a BellSouth Telephone Company, testimony addressing the definition and measurement of the cost of supplying universal service. (Direct testimony filed October 20, 1995. Rebuttal testimony filed October 25, 1995). Additional testimony regarding economic principles underlying the creation of a competitively-neutral universal service fund: direct testimony filed October 30, 1995. Rebuttal testimony filed November 3, 1995.
268. Tennessee Public Service Commission (*In re: The Avoidable Costs of Providing Bundled Services for Resale by Local Exchange Telephone Companies*) on behalf of BellSouth Telecommunications, Inc. (Docket No. 96-00067): economic costing and pricing principles for resold and unbundled services. May 24, 1996. Refiled with the Tennessee Regulatory Authority (Docket No. 96-00067), August 23, 1996.
269. Tennessee Regulatory Authority (*In re: The Avoidable Costs of Providing Bundled Services for Resale by Local Exchange Telephone Companies*) on behalf of BellSouth Telecommunications, Inc. (Docket No. 96-01331): economic costing and pricing principles for resold and unbundled services. Filed September 10, 1996. Rebuttal testimony filed September 20, 1996.
270. Tennessee Regulatory Authority (*In re: Petition to Convene a Contested Case Proceeding to Establish "Permanent Prices" for Interconnection and Unbundled Network Elements*) on behalf of BellSouth Telecommunications, Inc. (Docket No. 97-01262): rebuttal testimony regarding costing principles on which to base prices of unbundled network elements. Filed October 17, 1997.
271. Tennessee Regulatory Authority (Docket No. 97-00888), on behalf of BellSouth Telecommunications, Inc.: direct testimony regarding appropriate economic principles for sizing the state universal service fund, Filed April 3, 1998. Rebuttal filed April 9, 1998.
272. Tennessee Regulatory Authority (Docket No. 99-00377), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic in Arbitration with ICG Telecom Group, filed October 15, 1999. Rebuttal testimony filed October 25, 1999.
273. Tennessee Regulatory Authority (Docket No. 99-00430), on behalf of BellSouth Telecommunications, direct testimony regarding intercarrier compensation for Internet-bound traffic in Arbitration with ITC-DeltaCom, filed October 15, 1999. Rebuttal testimony filed October 25, 1999.
274. Tennessee Regulatory Authority, (Docket No. 97-00409), on behalf of BellSouth Telecommunications, rebuttal testimony regarding efficient pricing for pay telephone services. Filed October 6, 2000.
275. Tennessee Regulatory Authority, (Docket No. 01-00193), on behalf of BellSouth Telecommunications: rebuttal testimony regarding performance measurements and self-effectuating penalties. Filed August 10, 2001.

*Texas*

276. *Darren B. Swain, Inc. d/b/a U.S. Communications v. AT&T Corp.*, United States District

Court for the Northern District of Texas, Dallas Division, Civil Action 394CV-1088D: Retained by counsel for U.S. Communications, a reseller of AT&T long distance services, plaintiff in an antitrust suit alleging monopolization in inbound business long distance markets. Antitrust liability and damages. Confidential Report, November 17, 1995.

277. Public Utility Commission of Texas (Docket No. 8585) on behalf of Southwestern Bell Telephone Company; analysis of Texas intrastate switched access charges and bypass of switched access. Filed December 18, 1989.

278. Texas Public Utility Commission (Docket No. 21982), on behalf of Southwestern Bell Telephone Company, direct testimony regarding CLEC's rate for transport and termination of ISP-bound traffic. Filed March 13, 2000. Rebuttal testimony filed March 31, 2000.

#### *Utah*

279. Utah Public Service Commission (Docket No. 99-049-41), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 28, 2000.

280. Utah Public Service Commission (Docket No. 00-999-05), on behalf of Qwest Corporation, direct testimony regarding intercarrier compensation for Internet-bound traffic. Filed February 2, 2001. Rebuttal testimony filed March 9, 2001.

281. Utah Public Service Commission on behalf of Qwest Corporation, direct testimony regarding productivity offsets in a price cap plan. Filed October 5, 2001. Rebuttal testimony filed November 22, 2001.

#### *Vermont*

282. Vermont Public Service Board, Petition for Price Regulation Plan of New England Telephone on behalf of New England Telephone Company, Dockets 5700/5702: analysis of appropriate parameters for a price regulation plan. Filed September 30, 1993. Rebuttal testimony filed July 5, 1994.

283. Vermont Public Service Board, (Open Network Architecture Docket No. 5713) on behalf of New England Telephone Company, economic principles for local competition, interconnection and unbundling, direct testimony filed June 7, 1995. Rebuttal testimony filed July 12, 1995.

284. Vermont Public Service Board (Docket No. 5713), on behalf of Bell Atlantic – Vermont, direct testimony regarding economic principles for setting prices and estimating costs for interconnection. Filed July 31, 1997. Rebuttal testimony filed January 9, 1998. Surrebuttal testimony filed February 26, 1998. Supplemental rebuttal testimony filed March 4, 1998.

285. Vermont Public Service Board (Docket No. 5900) on behalf of NYNEX, testimony regarding the economic effects of the proposed merger between Bell Atlantic and NYNEX. Filed September 6, 1996.

286. Vermont Public Service Board (Docket no. 6000), on behalf of Bell Atlantic: direct testimony examining the likely benefits from adopting a price regulation plan. Filed January 19, 1998.

287. Vermont Public Service Board (Docket No. 6077), on behalf of Bell Atlantic-Vermont: rebuttal testimony regarding application of imputation standard, filed November 4, 1998.

288. Vermont Public Service Board (Docket No. 6167), on behalf of Bell Atlantic, rebuttal testimony regarding reduction of access charges & pricing of new services. Filed May 20, 1999. Supplemental testimony filed May 27, 1999.

*Virginia*

289. Affidavit to the U.S. District Court for the Eastern District of Virginia (Alexandria Division) on behalf of United States Telephone Association, *United States Telephone Association, et al., v. Federal Communications Commission, et al.*, (Civil Action No. 95-533-A) regarding the Section 214 process for local exchange companies providing cable television services. Filed October 30, 1995, (with A.E. Kahn).
290. State Corporation Commission of Virginia (Case No. PUC 950067) on behalf of Bell Atlantic - Virginia, Inc., rebuttal testimony concerning economic standards for the classification of services as competitive for regulatory purposes, January 11, 1996.
291. State Corporation Commission of Virginia, on behalf of Bell Atlantic-Virginia, (Case No. PUC960), direct testimony regarding costing and pricing of interconnection and unbundled network elements. Filed December 20, 1996. Rebuttal testimony filed June 10, 1997 (Case No. PUC970005).
292. State Corporation Commission of Virginia *In re: Joint Petition of Bell Atlantic Corporation and GTE Corporation for approval of agreement and plan of merger*, economic effects of the proposed merger of Bell Atlantic and GTE. File May 28, 1999, rebuttal testimony filed October 8, 1999.
293. Virginia State Corporation Commission, (Case No. PUC000079) on behalf of Bell Atlantic-Virginia, direct testimony regarding intercarrier compensation for Internet-bound traffic in arbitration with Focal Communications Group. Filed April 25, 2000.
294. Virginia State Corporation Commission, (Case No. PUC 000003) on behalf of Bell Atlantic-Virginia, direct testimony regarding efficient pricing of carrier access charges. Filed May 30, 2000.

*Washington*

295. Washington Public Utilities Commission (Docket No. UT-990300), on behalf of US WEST, regarding US WEST's interconnection arbitration with AirTouch Paging in Washington. Direct testimony filed February 24, 1999; rebuttal testimony filed March 8, 1999.
296. Washington Utilities and Transportation Commission (Docket No. UT-991358), on behalf of US West Communications, Inc., rebuttal testimony regarding the effects of the proposed Qwest-US West merger on economic welfare. Filed February 22, 2000.
297. Washington Utilities and Transportation Commission (Docket No. UT-003006), on behalf of US West Communications, Inc., direct testimony regarding intercarrier compensation for internet-bound traffic. Filed April 26, 2000. Rebuttal testimony filed May 10, 2000.
298. Washington Transportation and Utilities Commission, *In the Matter of the Petition of Qwest Corporation for Competitive Classification of Business Services in Specified Wire Centers*, Docket No. UT-000883. Rebuttal testimony regarding economic criteria for classification of services as competitive. Filed October 6, 2000.
299. Washington Utilities and Transportation Commission (Docket No. UT-02-11-20), on behalf of Qwest, rebuttal testimony regarding economic aspects of the sale of Qwest Dex (Yellow Pages). Filed April 17, 2003.

*West Virginia*

300. Public Service Commission of West Virginia (Case No. 94-1103-T-GI) on behalf of Bell Atlantic - West Virginia: economic analysis of issues regarding proposed presubscription for intraLATA toll traffic in West Virginia, March 24, 1995.
301. Public Service Commission of West Virginia (Case Nos. 96-1516-T-PC, 96-1561-T-PC,

96-1009-T-PC, and 96-1533-T-T) on behalf of Bell Atlantic - West Virginia: direct testimony regarding costing and pricing of interconnection and unbundled network elements. Filed February 13, 1997. Rebuttal testimony filed February 20, 1997.

302. Public Service Commission of West Virginia on behalf of Bell Atlantic - West Virginia: economic analysis of issues regarding Bell Atlantic's entry into the interLATA long distance market. Filed March 31, 1997.

#### *Wyoming*

303. Wyoming Public Service Commission (Docket No. 70000-TR-99), on behalf of US West Communications, direct testimony evaluating proposed prices of non-competitive US West services with regards to cost, pricing, competition, & regulation. Filed April 26, 1999.

304. Wyoming Public Service Commission (Docket Nos. 74142-TA-99-16, 70000-TA-99-503, 74037-TA-99-8, 70034-TA-99-4, 74089-TA-99-9, 74029-TA-99-43, 74337-TA-99-2, Record No. 5134), on behalf of US West Communications, rebuttal testimony regarding economic issues arising in the proposed merger between U S WEST and Qwest. Filed April 4, 2000.

#### *Canada*

305. Canadian Radio-Television and Telecommunications Commission (Docket No. 1990-73) on behalf of Bell Canada: "The Effect of Competition on U.S. Telecommunications Performance," (with L.J. Perl). Filed November 30, 1990.

306. Canadian Radio-Television and Telecommunications Commission (Docket No. 92-78) on behalf of Alberta General Telephone: "Lessons for the Canadian Regulatory Structure from the U.S. Experience with Incentive Regulation," and "Performance Under Alternative Forms of Regulation in the U.S. Telecommunications Industry," (with T.J. Tardiff). Filed April 13, 1993.

307. Canadian Radio-Television and Telecommunications Commission (Application of Teleglobe Canada for Review of the Regulatory Framework of Teleglobe Canada Inc.): on behalf of Teleglobe Canada, Inc., structure of a price regulation plan for the franchised supplier of overseas telecommunications services in Canada. Filed December 21, 1994.

308. Canadian Radio-Television and Telecommunications Commission, Response to Interrogatory SRCI(CRTC) 1Nov94-906, "Economies of Scope in Telecommunications," on behalf of Stentor. Filed January 31, 1995.

309. Canadian Radio-Television and Telecommunications Commission, Implementation of Regulatory Framework and Related Issues, Telecom Public Notices CRTC 94-52, 94-56 and 94-58, "Economic Welfare Benefits from Rate Rebalancing," on behalf of Stentor. Filed February 20, 1995.

310. Canadian Radio-Television and Telecommunications Commission, "Imputation Test to be Applied to Competitive Local Exchange Services," position paper on imputation for local exchange services filed in response to Telecom Public Notice CRTC 95-36 on behalf of Stentor on August 18, 1995.

311. Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 96-8, "Economic Aspects of Canadian Price Cap Regulation," on behalf of the Stentor companies. Filed June 10, 1996.

312. Canadian Radio-Television and Telecommunications Commission, in response to CRTC Telecom Public Notice CRTC 96-8, "Economic Aspects of Price Cap Regulation for MTS NetCom Inc.," on behalf of MTS Net Com, Inc. Filed June 10, 1996.

313. Canadian Radio-Television and Telecommunications Commission, in response to CRTC

Telecom Public Notice CRTC 2000-108, "MTS Communications Inc., Recovery of 2000 and 2001 Income Tax Expense" on behalf of MTS Communications, Inc. Oral panel testimony, January 11, 2001.

314. Canadian Radio-Television and Telecommunications Commission (Public Notice CRTC 2001-37) on behalf of Aliant Telecom Inc., Bell Canada, MTS Communications Inc., and Saskatchewan Telecommunications: "Price Cap Review and Related Issues," filed May 31, 2001. Rebuttal evidence filed September 20, 2001.

*Federal Communications Commission*

**1988**

315. Federal Communications Commission (Docket No. 87-313) on behalf of Bell Communications Research, Inc.: empirical analysis of price cap regulation of interstate access service, entitled "The Impact of Federal Price Cap Regulation on Interstate Toll Customers." Filed March 17, 1988.

316. Federal Communications Commission (Docket No. 87-313) on behalf of Bell Communications Research, Inc.: "The Impact of the FCC Proposed Price Cap Plan on Interstate Consumers," Filed August 18, 1988. Rebuttal analysis filed November 18, 1988.

**1989**

317. Federal Communications Commission (Docket No. 87-313) on behalf of Cincinnati Bell Telephone Company, "Incentive Regulation and Estimates of Productivity," (with J. Rohlfs), June 9, 1989.

318. Federal Communications Commission (Docket No. 87-313) on behalf of the United States Telephone Association: "Analysis of AT&T's Comparison of Interstate Access Charges Under Incentive Regulation and Rate of Return Regulation." Filed as Reply Comments regarding the FCC's Report and Order and Second Further Notice of Proposed Rulemaking in CC Docket 87-313, August 3, 1989.

319. Federal Communications Commission (Docket No. 87-313) on behalf of Southwestern Bell Telephone Company, "Taxes and Incentive Regulation," filed as Exhibit 3 to the Reply Comments of Southwestern Bell regarding the FCC's Report and Order and Second Further Notice of Proposed Rulemaking in CC Docket 87-313, August 3, 1989.

**1990**

320. Federal Communications Commission (Docket 87-313) on behalf of the United States Telephone Association: "Local Exchange Carrier Productivity Offsets for the FCC Price Cap Plan," May 3, 1990.

321. Federal Communications Commission (Docket 87-313) on behalf of the United States Telephone Association: "Productivity Offsets for LEC Interstate Access," June 8, 1990.

322. Federal Communications Commission (Docket 87-313) on behalf of the United States Telephone Association: "Interstate Access Productivity Offsets for Mid-Size Telephone Companies," June 8, 1990.

323. Federal Communications Commission (Docket 87-313) on behalf of the United States Telephone Association: analysis of total factor productivity calculations, entitled "Productivity Measurements in the Price Cap Docket," December 21, 1990.

### 1991

324. Federal Communications Commission (Docket 87-313) on behalf of BellSouth Corporation, "The Treatment of New Services under Price Cap Regulation," (with Alfred E. Kahn), June 12, 1991.
325. Federal Communications Commission (Docket 91-141, Expanded Interconnection with Local Telephone Company Facilities) on behalf of Bell Atlantic, "Effects of Competitive Entry in the U.S. Interstate Toll Markets." August 6, 1991.
326. Federal Communications Commission (Docket 91-141, Expanded Interconnection with Local Telephone Company Facilities) on behalf of Southwestern Bell, "Economic Effects of the FCC's Tentative Proposal for Interstate Access Transport Services." Filed September 20, 1991.

### 1992

327. Federal Communications Commission, (Pacific Bell Tariff F.C.C. No. 128, Transmittal No. 1579) on behalf of Pacific Bell, "The Treatment of FAS 106 Accounting Changes Under FCC Price Cap Regulation," (with T.J. Tardiff). Filed April 15, 1992. Reply comments filed July 31, 1992.
328. Federal Communications Commission, (CC Docket 92-141, In the Matter of 1992 Annual Access Tariff Filings) on behalf of Bell Atlantic, "Effects of Competitive Entry in the U.S. Interstate Toll Markets: An Update," filed July 10, 1992.
329. Federal Communications Commission (ET Docket 92-100) on behalf of BellSouth Corporation, "Assigning PCS Spectrum: An Economic Analysis of Eligibility Requirements and Licensing Mechanisms," (with Richard Schmalensee). Filed November 9, 1992.

### 1993

330. Federal Communications Commission (Petition for Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region) on behalf of Ameritech: "Price Cap Regulation and Enhanced Competition for Interstate Access Services," filed April 16, 1993, Reply Comments, July 12, 1993.
331. Federal Communications Commission (Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems) PR Docket No. 93-61 on behalf of PacTel Teletrac, "The Economics of Co-Channel Separation for Wideband Pulse Ranging Location Monitoring Systems," (with R. Schmalensee). Filed June 29, 1993.
332. Federal Communications Commission (In the Matter of Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorization Therefor) on behalf of four Regional Bell Holding Companies, Affidavit "Interstate Long Distance Competition and AT&T's Motion for Reclassification as a Nondominant Carrier," filed November 12, 1993, (with A.E. Kahn).

### 1994

333. Federal Communications Commission (CC Docket 94-1) on behalf of the United States Telephone Association: "Economic Performance of the LEC Price Cap Plan," filed as Attachment 5 to the United States Telephone Association Comments, May 9, 1994, "Economic Performance of the LEC Price Cap Plan: Reply Comments," filed as Attachment 4 to the United States Telephone Association Reply Comments, June 29, 1994.
334. Federal Communications Commission (CC Docket 94-1) on behalf of the United States Telephone Association: "Comments on the USTA Pricing Flexibility Proposal," filed as Attachment 4 to the United States Telephone Association Comments, May 9, 1994, "Reply

Comments: Market Analysis and Pricing Flexibility for Interstate Access Services,” filed as Attachment 3 to the United States Telephone Association Reply Comments, June 29, 1994 (with Richard Schmalensee).

335. Federal Communications Commission (File Nos. W-P-C 6912 and 6966) on behalf of Bell Atlantic Corporation, affidavit supporting Section 214 applications to provide video dialtone services, August 5, 1994.

336. Federal Communications Commission (File Nos. W-P-C 6982 and 6983) on behalf of NYNEX: affidavit supporting Section 214 applications to provide video dialtone services in Massachusetts and Rhode Island, September 21, 1994.

### 1995

337. Federal Communications Commission on behalf of Bell Atlantic Corporation, affidavit examining cost support for Asymmetric Digital Subscriber Loop (ADSL) video dialtone market trial. Filed February 21, 1995.

338. Federal Communications Commission on behalf of Bell Atlantic Corporation, affidavit examining cost support for Bell Atlantic’s video dialtone tariff. Filed March 6, 1995.

339. Federal Communications Commission on behalf of the United States Telephone Association, study entitled “Competition in the Interstate Long-Distance Markets: Recent Evidence from AT&T Price Changes,” *ex parte* filing in CC Docket No. 94-1, March 16, 1995.

340. Federal Communications Commission (CC Docket No. 79-252) on behalf of Bell Atlantic, BellSouth, SBC, and Pacific Telesis. “An Analysis of the State of Competition in Long-Distance Telephone Markets,” study attached to *ex parte* comments examining the competitiveness of interstate long-distance telephone markets, (with J. Douglas Zona), April 1995.

341. Federal Communications Commission (File Nos. W-P-C 7074) on behalf of Southern New England Telephone Company, affidavit supporting Section 214 applications to provide video dialtone services, July 6, 1995.

342. Federal Communications Commission (CC Docket No. 95-145) on behalf of Bell Atlantic Corporation, affidavit examining economic issues raised in the investigation of Bell Atlantic’s video dialtone tariff. Filed October 26, 1995. Supplemental Affidavit filed December 21, 1995.

343. Federal Communications Commission (CC Docket No. 94-1) on behalf of the United States Telephone Association, “Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review,” Attachment C to the United States Telephone Association “Comments,” filed December 18, 1995 (with T. Tardiff and C. Zarkadas). Reply Comments filed March 1, 1996.

### 1996

344. Federal Communications Commission (CC Docket No. 95-185) on behalf of NYNEX, “Affidavit Concerning Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers,” filed March 4, 1996.

345. Federal Communications Commission (CC Docket No. 96-45) on behalf of BellSouth Corporation, “Comments on Universal Service,” (with Kenneth Gordon) , analysis of proposed rules to implement the universal service requirements of the Telecommunications Act of 1996, filed April 12, 1996.

346. Federal Communications Commission (CC Docket No. 96-46), on behalf of Bell Atlantic, BellSouth, GTE, Lincoln, Pacific Bell and SBC Communications, Inc., *ex parte* affidavit on costing principles and cross-subsidization in broadband, joint-use networks, April 26, 1996.

347. Federal Communications Commission (CC Docket No. 96-98) videotaped presentation on economic costs for interconnection, FCC Economic Open Forum, May 20, 1996.
348. Federal Communications Commission (CC Docket No. 96-112), on behalf of the Southern New England Telephone Company: cost allocation between telephony and broadband services, Affidavit filed May 31, 1996.
349. Federal Communications Commission (CC Docket No. 96-112), on behalf of Bell Atlantic: reply comments concerning cost allocations between telephony and broadband services, Affidavit filed June 12, 1996.
350. Federal Communications Commission (CC Docket No. 96-46), on behalf of Bell Atlantic, BellSouth, GTE, Lincoln, Pacific and SBC, Declaration concerning the use of efficient component pricing in open video systems. Filed July 5, 1996.
351. Federal Communications Commission (CC Docket No. 96-98), on behalf of the United States Telephone Association, Affidavit concerning technical qualities of the Staff Industry Demand and Supply Simulation Model. Filed July 8, 1996; *ex parte* letters filed July 22, 1996 and July 23, 1996.
352. Federal Communications Commission (CC Docket No. 96-45), on behalf of BellSouth Corporation, comments concerning the use of proxy cost models for measuring the cost of universal service. Filed August 9, 1996 (with Aniruddha Banerjee).
353. Federal Communications Commission (CC Docket No. 96-149), on behalf of Bell Atlantic, Affidavit concerning safeguards for in-region supply of interexchange services by local exchange carriers. Filed August 15, 1996.
354. Federal Communications Commission (CC Docket No. 96-45), on behalf of the United States Telephone Association, "Not the Real McCoy: A Compendium of Problems with the Hatfield Model." Filed October 15, 1996
355. Federal Communications Commission (Tracking No. 96-0221) on behalf of NYNEX and Bell Atlantic, affidavit concerning the competitive effects of the proposed NYNEX-Bell Atlantic merger. Filed October 23, 1996 (with Richard Schmalensee).
356. Affidavit to the Federal Communications Commission, on behalf of SBC Communications, Inc., (Docket No. 96-149), regarding Commission's proposed rules and their impact on joint marketing. Filed November 14, 1996 (with Paul B. Vasington).

## 1997

357. Federal-State Joint Board on Universal Service, on behalf of the United States Telephone Association, *Remarks on Proxy Cost Models*, CC Docket No. 96-45 (videotape filed in docket). Filed January 14, 1997.
358. Federal Communications Commission, on behalf of Bell Atlantic: "An Analysis of Conceptual Issues Regarding Proxy Cost Models", a response to FCC Staff Report on issues regarding Proxy Cost Models. Filed February 13, 1997.
359. Federal Communications Commission (CC Docket No. 96-262 et. al.), statement on behalf of United States Telephone Association, "Economic Aspects of Access Reform." Filed on January 29, 1997 (with Richard Schmalensee). Rebuttal filed on February 14, 1997.
360. Federal Communications Commission (CC Docket 96-262 et al.), on behalf of USTA: a report entitled, "An Analysis of the Welfare Effects of Long Distance Market Entry by an Integrated Access and Long Distance Provider", *ex parte* filed March 7, 1997 (with Richard Schmalensee, Doug Zona and Paul Hinton).
361. Federal Communications Commission (CC Docket 96-262 et al.), on behalf of the United States Telephone Association: a report entitled, "An Update of the FCC Short-Term Productivity Study (1985-1995)", *ex parte* filed March 1997.
362. Federal Communications Commission (CC Docket No. 96-149), on behalf of Bell



Atlantic, BellSouth, NYNEX, Pacific Bell and SBC: affidavit concerning economic issues raised by the BOC supply of interLATA services to an affiliate. Filed April 17, 1997.

363. Federal Communications Commission (CC Docket Nos. 93-193, Phase 1, Part 2, 94-65), on behalf of Bell Atlantic: affidavit concerning allocation of earnings sharing and refunds in the local exchange carrier price cap plan. Filed May 19, 1997.

364. Federal Communications Commission (File No. SCL-97-003), on behalf of ATU Long Distance: affidavit concerning the economic effects of classifying a proposed undersea cable between Alaska and the lower 48 states as a private carrier. Filed December 8, 1997.

365. Federal Communications Commission (CC Docket No. 80-286), on behalf of Bell Atlantic: affidavit concerning proposed reforms of jurisdictional separations. Filed December 10, 1997.

## 1998

366. Federal Communications Commission (*ex parte* CC Docket No. 96-262 et. al.), "The Need for Carrier Access Pricing Flexibility in Light of Recent Marketplace Developments: A Primer," research paper prepared on behalf of United States Telephone Association. Filed on January 21, 1998 (with Richard Schmalensee).

367. Federal Communications Commission, *In the Matter of Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc.* (CC Docket No. 97-211), affidavit on behalf of GTE Corporation analyzing the likely economic effects of the proposed acquisition of MCI by WorldCom, (with R. Schmalensee), March 13, 1998, reply affidavit filed May 26, 1998.

368. Federal Communications Commission, *In the Matter of Customer Impact of New Access Charges* (CC Docket Nos. 96-262 and 96-45), affidavit on behalf of the United States Telephone Association analyzing long distance price reductions stemming from recent access charge reductions. Filed March 18, 1998.

369. Federal Communications Commission, *In the Matter of MCI Telecommunications Corp. Petition for Prescription of Tariffs Implementing Access Charge Reform* (CCB/CPD 98-12), affidavit on behalf of Bell Atlantic analyzing economic issues in MCI's petition for changes in the level and structure of interstate access charges. Filed March 18, 1998.

370. Federal Communications Commission, *Merger of SBC Communications Inc. and Ameritech Corporation*, comments on behalf of SBC and Ameritech analyzing the likely effects of the proposed merger on competition. (with R. Schmalensee ) Filed July 21, 1998, reply affidavit filed November 11, 1998.

371. Federal Communications Commission, *In the Matter of United States Telephone Association Petition for Rulemaking—1998 Biennial Regulatory Review*, "Economic Standards for the Biennial Review of Interstate Telecommunications Regulation," economic rationale for regulatory simplification, Attachment to the Petition for Rulemaking of the United States Telephone Association, filed September 30, 1998 (with Robert W. Hahn).

372. Federal Communications Commission, (CC Docket No. 96-262), "Assessment of AT&T's Study of Access Charge Pass-Through," study of long distance pricing, filed *ex parte* on behalf of the United States Telephone Association, October 22, 1998 (with P.S. Brandon)

373. Federal Communications Commission, (CC Docket No. 96-262), "AT&T, MCI, and Sprint Failed to Pass Through the 1998 Interstate Access Charge Reductions to Consumers," study of long distance pricing, filed *ex parte* on behalf of the United States Telephone Association, October 16, 1998 (with P.S. Brandon)

374. Federal Communications Commission, (CC Docket No. 98-137), Affidavit on behalf of the United States Telephone Association, Review of Depreciation Requirements for Incumbent Local Exchange Carriers, November 23, 1998. (with A. Banerjee).

375. Federal Communications Commission, (CC Docket Nos. 96-262, 94-1, 97-250 and RM 9210), "Access Reform Again: Market-Based Regulation, Pricing Flexibility and the Universal Service Fund," Attachment A to the Comments of the United States Telephone Association, filed October 26, 1998; "Productivity and Pricing Flexibility: Reply Comments," Attachment A to the Reply Comments of the United States Telephone Association, filed November 9, 1998.

## 1999

376. Federal Communications Commission (Docket No. 99-24), affidavit on behalf of Bell Atlantic: economic requirements for regulatory forbearance for special access services. Filed January 20, 1999 (with Karl McDermott). Reply affidavit responding to claims that Bell Atlantic retains market power in the provision of special access filed April 8, 1999.

377. Federal Communications Commission, *In the Matter of Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, InterLATA Service in the State of New York* (CC Docket No. 99-295), Declaration on behalf of Bell Atlantic analyzing public interest issues in connection with Bell Atlantic long distance entry in New York. Filed September 29, 1999.

378. Federal Communications Commission (Docket No. 96-262), on behalf of United States Telephone Association, comments regarding rate structures for the local switching service category of the traffic-sensitive basket and common line basket, filed October 29, 1999. Reply comments filed November 29, 1999.

379. Federal Communications Commission (Docket No. 99-68), "An Economic and Policy Analysis of Efficient Intercarrier Compensation Mechanisms for Internet-Bound Traffic," on behalf of U S WEST Communications, ex parte analysis of intercarrier compensation plans for ISP-bound traffic, November 12, 1999 (with A. Banerjee and A. Ros). Reply Comments: "Efficient Inter-Carrier Compensation for Internet-Bound Traffic," (with A. Banerjee), October 23, 2000.

## 2000

380. Federal Communications Commission (Docket Nos. 94-1, 96-26), comments on behalf of the United States Telecom Association regarding the proposed represcription of the productivity offset in the FCC's price cap plan, January 7, 2000. Reply comments filed January 24, 2000, Ex parte presentation filed May 5, 2000.

381. Federal Communications Commission, *In the Matter of Reciprocal Compensation for CMRS Providers* (CC Docket Nos. 96-98, 95-185, WT Docket No. 97-207), "Reciprocal Compensation for CMRS Providers," on behalf of United States Telecom Association, reply comments regarding interconnection with CMRS providers, June 13, 2000 (with Charles Jackson).

382. Federal Communications Commission, *In the Matter the Remand of the Commission's Reciprocal Compensation Declaratory Ruling by the U.S. Court of Appeals for the D.C. Circuit* (CC Docket Nos. 96-98, 99-68), on behalf of Verizon, declaration regarding intercarrier compensation for Internet-bound traffic, filed July 21, 2000. Reply declaration filed August 4, 2000.

383. Federal Communications Commission, *In the Matter of Application by Verizon New England Inc., et. al. for Authorization to Provide In-Region, InterLATA Services in Massachusetts*, on behalf of Verizon New England, Appendix A, declaration regarding competition in Massachusetts and the public interest benefits of interLATA entry, September 19, 2000, Reply Declaration filed November 3, 2000. Supplemental Reply Declaration filed February 28, 2001.

## 2001

384. Federal Communications Commission, *In the Matter of Application by Verizon New England Inc., et. al. for Authorization to Provide In-Region, InterLATA Services in Connecticut*, on behalf of Verizon New England, Appendix A, declaration regarding competition in Connecticut and the public interest benefits of interLATA entry, May 24, 2001.
385. Federal Communications Commission, *In the Matter of Application by Verizon Pennsylvania Inc., et. al. for Authorization to Provide In-Region, InterLATA Services in Pennsylvania*, on behalf of Verizon Pennsylvania, Appendix A, declaration regarding competition in Pennsylvania and the public interest benefits of interLATA entry, June 21, 2001.
386. Federal Communications Commission (CC Docket No. 01-92), on behalf of BellSouth Corporation: Reply Declaration (with Aniruddha Banerjee) on a unified regime of inter-carrier compensation (calling party's network pays or bill and keep?). Filed November 5, 2001.
387. Federal Communications Commission (CC Docket No. 01-277), on behalf of BellSouth Corporation: Reply Affidavit on BellSouth's application for interLATA authority in Georgia and Louisiana. Filed November 13, 2001.

## 2002

388. Federal Communications Commission (CC Docket Nos. 99-273, 92-105, 92-237), on behalf of BellSouth Corporation, Qwest Communications International, Inc., SBC Communications, Inc., and Verizon Telephone Companies: Affidavit: "Competition and Regulation for Directory Assistance Services" (with Harold Ware) regarding incremental costs and benefits from 411 presubscription. Filed April 1, 2002.
389. Federal Communications Commission (CC Docket Nos. 01-338, 96-98, 98-47), on behalf of BellSouth Corporation: Reply Declaration (with Aniruddha Banerjee, Charles Zarkadas and Agustin Ros) regarding unbundling obligations of local exchange carriers. Filed July 17, 2002.
390. Federal Communications Commission (RM No. 10593) on behalf of BellSouth Corporation, Qwest Corporation, SBC Communications, Inc., and Verizon, regarding pricing flexibility for interstate special access services (with A.E. Kahn), filed December 2, 2002.

## Mexico

391. Mexican Secretariat of Communications and Transport on behalf of Southwestern Bell International Holdings Corporation, affidavit on interconnection regulation (with T.J. Tardiff). Filed October 18, 1995.
392. Comisión Federal de Telecomunicaciones de México ("Cofetel"), "Economic Parameter Values in the Telmex Price Cap Plan," arbitrator's report on behalf of COFETEL and Telmex regarding the renewal of the price cap plan for Telmex, February 15, 1999.
393. Comisión Federal de Telecomunicaciones de México, on behalf of the Commission, "Telmex's 2003-2006 Price Cap Tariff Proposal," expert report regarding the renewal of the price cap plan for Telmex, (with A. Ros, G. Martinez and A. Banerjee), filed December 13, 2002.

## New Zealand

394. Commerce Commission of New Zealand on behalf of New Zealand Telecom, "Review of CostQuest Associates' Benchmarking Survey" En banc hearings May 13-17, 2002.
395. Commerce Commission of New Zealand on behalf of New Zealand Telecom, "The Wholesale Discount" En banc hearings February 10, 2003

*United States Department of Justice*

396. Affidavit to the U.S. Department of Justice on behalf of NYNEX in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding provision of telecommunications services across LATA boundaries for traffic originating or terminating in New York State. Filed August 25, 1994.

397. Affidavit to the U.S. Department of Justice on behalf of SBC Communications Inc. in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding Telefonos de Mexico's (Telmex's) provision of interexchange telecommunications services within the United States. Filed May 22, 1995.

398. Affidavit to the U.S. Department of Justice on behalf of SBC Communications Inc. in *United States of America v. Western Electric Company, Inc. and American Telephone and Telegraph Company*, regarding provision of interexchange telecommunications services to customers with independent access to interexchange carriers. Filed May 30, 1995.

*United States Senate*

399. Subcommittee on Communications of the Senate Committee on Commerce, Science and Transportation, *Statement* and oral testimony regarding long distance competition and Section 271 of the Telecommunications Act of 1996. Filed March 25, 1998.

December, 2003

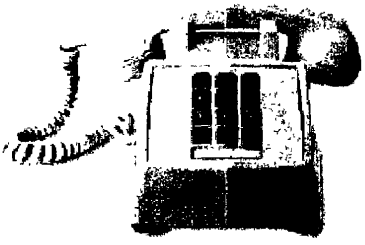
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|   | <b>International Calling</b><br>International Calling Options   | • not available online   | Your choice of the following: <sup>1</sup> <ul style="list-style-type: none"> <li>• AT&amp;T Local One Rate Plus Plan<sup>SM</sup> (\$3.95/mth)</li> <li>• AT&amp;T Unlimited Plan<sup>D</sup> (\$19.95/mth)</li> <li>• AT&amp;T One Rate<sup>SM</sup> 10¢ Plan (no monthly plan fee)</li> </ul>   |
|   |   | AT&T AnyHour International Savings Advantage <sup>†</sup> (\$3.95/mth)                 | AT&T AnyHour International Savings Advantage <sup>†</sup> (\$3.95/mth)   |
| The packages above also come with your choice of the following for an additional monthly fee  |   |  |  |
| <ul style="list-style-type: none"> <li>• Voicemail<sup>5</sup></li> <li>• Voicemail - Spanish<sup>5</sup></li> <li>• AT&amp;T Complete Maintenance Plan<sup>SM</sup> <sup>4</sup></li> <li>• Inside Wire Maintenance Plan<sup>9</sup></li> <li>• AT&amp;T Telephone Protection Plan<sup>10</sup></li> <li>• No Maintenance Plan</li> <li>• Caller ID with Anonymous Call Rejection<sup>1</sup></li> <li>• Caller ID with Name with Anonymous Call Rejection<sup>1</sup></li> <li>• Call Waiting ID with Anonymous Call Rejection<sup>1</sup></li> <li>• Anonymous Call Rejection with Call Return and Repeat Dialing<sup>1</sup></li> <li>• Anonymous Call Rejection w/Repeat Dialing<sup>1</sup></li> <li>• Call Waiting</li> <li>• Speed Dial 8</li> <li>• Speed Dial 30</li> <li>• Call Forwarding - Variable</li> <li>• Call Return</li> <li>• Caller ID Block (per line)</li> <li>• Repeat Dialing</li> <li>• Three-Way Calling</li> <li>• Call Block - 10-10-XXX Restriction</li> <li>• Call Block - Collect Calls</li> <li>• Call Block - Third Party Billing</li> <li>• Call Block - Third Party &amp; Collect</li> <li>• Directory Listing - Standard</li> </ul> |   |  |  |

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- Unlimited nationwide PCS for \$130 + Sprint Complete Sense residential monthly recurring charge
- Sprint Complete Sense residential has three unlimited price points that can be combined with the \$130 unlimited PCS plan, depending on the state:
  - o \$49.99 + \$130= \$179.99
  - o \$55.99 + \$130= \$185.99
  - o \$59.99 + \$130= \$189.99

##### Sprint Complete Sense 50

- Unlimited local calling
- 50 block of time (7-cents per minute after 50; in-state, and domestic state-to-state calling standard International fees apply)
- Calling features: Call Waiting, Caller ID, Three-Way calling and Speed Dial 8
- Voicemail can be added for \$5.99 per month
  - o \$34.99
  - o \$39.99
  - o \$44.99

\*Sprint PCS customers who prefer to stay on their existing plan will receive a five percent discount when they subscribe to Sprint Complete Sense Unlimited

|                      | SCS<br>Unlimited<br>with PCS<br>Unlimited | SCS<br>Unlimited | SCS 250       | SCS 50            |
|----------------------|---|------------------|---------------|-------------------|
| Local/<br>Local Toll | Unlimited                                 | Unlimited        | Unlimited     | Unlimited         |
| Long Distance        | Unlimited                                 | Unlimited        | 250 minutes   | 50<br>minutes     |
| Wireless             | Unlimited                                 | 5% discount      | 5% discount   | N/A               |
| Voicemail            | Included                                  | Included         | \$5.99/mo     | \$5.99/mo         |
| Monthly Price        | \$179.99-<br>189.99                       | \$49.99-59.99    | \$44.99-54.99 | \$34.99-<br>44.99 |

Source: [http://www3.sprint.com/PR/PressKits/Attachments/135\\_1107.pdf](http://www3.sprint.com/PR/PressKits/Attachments/135_1107.pdf)

## EXHIBIT WET-II

### DESCRIPTION OF DATA USED

1. Verizon FL access lines in service for the period January 2000 to September 2003
  - a. Data includes Retail, Resale and UNE-P lines reported as systems (not VGEs) on a located basis.
  - b. Data excludes Digital/Hicap lines such as ISDN PRI and Cyber DS1
2. FL UNE-P migration orders and line counts from January 2002 to September 2003
  - a. UNE-P migration data represents all conversions to UNE-P (from all sources) for the specific time period.
  - b. Data was obtained from the Request Manager confirmation file.
  - c. Includes all LSRs confirmed either manually or via flow through.
3. FL UNE-L migration orders and line counts from January 2002 to September 2003
  - a. UNE-L migration data represents all conversions to UNE-L (from all sources) for the specific time period.
  - b. Data was obtained from the Request Manager confirmation file.
  - c. Includes all LSRs confirmed either manually or via flow through.
4. FL VZ UNE-L to Retail winback orders from January 2002 to September 2003
  - a. Data includes winback orders for customers coming back to Verizon Retail service from a CLEC.



**EXHIBIT WET-III  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT WET-IV  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT WET-V  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT WET-VI  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT WET-VII  
(Proprietary and Confidential)**

**[BEGIN VERIZON PROPRIETARY]**

**[END VERIZON PROPRIETARY]**

**EXHIBIT WET-VIII**

