BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition by DIECA Communications, Inc., d/b/a Covad Communications Company for Arbitration of Unresolved Issues in Interconnection Agreement with BellSouth Telecommunications, Inc.	Docket No. 001797-TP Filed: April 23, 2001

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JOINT DIRECT TESTIMONY AND EXHIBITS OF

ELIZABETH R. Y. KIENTZLE

AND

JOSEPH P. RIOLO

ON BEHALF OF COVAD COMMUNICATIONS COMPANY

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I. INTRODUCTION AND WITNESS QUALIFICATIONS

Q. What is the purpose of your testimony?

A. Covad Communications Company ("Covad") has asked us to provide expert testimony on the appropriate costs and prices, as well as some of the terms and conditions, of the line-sharing network elements that Covad will purchase from BellSouth Telecommunications, Inc. ("BellSouth"). Specifically, we address arbitration issues 16, 18, 23 and 24 (with respect to line-sharing costs only).

Q. Ms. Kientzle, please state your name, title and business address.

A. My name is Elizabeth R. Y. Kientzle. I am an independent consultant. My business address is 672 Jean Street, Oakland, CA 94610.

Q. Ms. Kientzle, please describe your qualifications and experience as they pertain to this proceeding.

A. I have over ten years of experience in utility analysis and regulatory advocacy, primarily in the local telecommunications and electric markets. I specialize in cost analysis, cost modeling, and market price forecasting. I have served as an expert witness on energy and telecommunications issues before state regulatory commissions in California and Nevada. I have performed cost analyses and critiqued utility cost modeling in support of expert witness testimony regarding unbundled network elements on behalf of competitive local exchange carriers in proceedings in California, Florida, Georgia, Maryland, New Jersey, New York, Pennsylvania, and Texas. Most recently, I have concentrated on cost issues of

particular interest to competitive providers of digital subscriber line ("DSL") services. Previously, I have studied costs related to electric industry deregulation, electric competitive bidding, power plant siting, and payments to independent power producers.

I have been an independent consultant since 1997. Prior to that time, I worked as a senior consultant with the firms of Slater Consulting and Morse, Richard, Weisenmiller & Associates. I received an M.A. in mathematics from University of California–Berkeley.

Exhibit _____ (ERYK/JPR-1) to this testimony provides more detail concerning my education, relevant work experience and qualifications.

Q. Mr. Riolo, please state your name, title and business address.

A. My name is Joseph P. Riolo. I am an independent telecommunications consultant. My business address is 102 Roosevelt Drive, East Norwich, NY 11732.

Q. Mr. Riolo, please describe your qualifications and experience as they pertain to this proceeding.

A. I have been an independent telecommunications consultant since 1992. As a consultant, I have submitted expert testimony on matters related to telephone plant engineering in California, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, West Virginia, Wisconsin and the District

of Columbia. I testified before this Commission in its recent Investigation into Pricing of Unbundled Network Elements, Docket No. 990649-TP, on behalf of BlueStar Networks, Inc., Covad Communications Company and Rhythms Links Inc.

I have personally engineered all manner of outside plant, including underground, aerial and buried plant in urban, suburban and rural environments. I have engineered copper and fiber plant as well as provisioned analog and digital services. I have participated in the design, development and implementation of methods and procedures relative to engineering planning, maintenance and construction. During the course of my career, I have had opportunities to place cable (both copper and fiber), splice cable (both copper and fiber), install digital loop carrier, test outside plant, and perform various installation and maintenance functions. I have prepared and awarded contracts for the procurement of materials. I have audited and performed operational reviews relative to matters of engineering, construction, assignment, and repair strategy in each company throughout the original Bell System.

I directed operations responsible for an annual construction budget of $100 million at New York Telephone Company. My responsibilities included, but were not limited to, engineering, construction, maintenance, assignment and customer services.

Further detail concerning my education, relevant work experience and qualifications can be found in Exhibit _____ (ERYK/JPR-2) to this testimony.

Q. What role did each witness play in the preparation of this testimony?

A. Although both of us have reviewed and support this testimony in its entirety, each of us assumed primary responsibility for specific segments of testimony. We each rely on the facts and analyses developed by the other in his or her areas of primary responsibility. Specifically:

- Ms. Kientzle is primarily responsible for the costing and pricing issues.
- Mr. Riolo is primarily responsible for technical and engineering issues, as well as terms and conditions.

II. SUMMARY: COVAD NEEDS REASONABLE RATES, TERMS AND CONDITIONS TO SUCCESSFULLY PROVISION LINE-SHARED LOOPS IN FLORIDA.

Q. What criteria must the prices for line-sharing network elements and interconnection meet?

A. Prices for unbundled network elements, including those related to advanced services such as line sharing, as well as related interconnection arrangements, must meet the criteria established in the Telecommunications Act of 1996 ("Act"), that prices for unbundled network elements be cost-based and nondiscriminatory. [Pub. L. 104-104, Title VII, § 252(d)(1), Feb. 8, 1996, 110 Stat. 153 (codified in scattered sections of Title 47 of the United States Code) (hereinafter referred to as the "Act").]

By ensuring that prices for the line-sharing elements and functions recover their forward-looking economic costs, but no more, the Commission can best promote the widespread provision of advanced telecommunications services in Florida. The FCC has consistently found that prices based on forward-looking economic cost "send the correct signals for entry, investment, and innovation in the long run." [In the Matter of Federal-State Joint Board on Universal Service, CC Docket 96-45, First Report and Order, rel. May 8, 1997, at ¶¶ 224, 273; *see also FCC Local Competition First Report and Order* at ¶ 672; FCC 99-119, Seventh Report & Order and Thirteenth Order on Reconsideration in CC Docket No. 96-45; Fourth Report & Order in CC Docket No. 96-262 and Further Notice of Proposed Rulemaking, rel. May 28, 1999, at ¶ 50.]

Q. Are there other public policy goals or concerns that are important to consider in setting prices for line-sharing elements and interconnection arrangements?

A. Yes. Covad provides DSL services over both stand-alone and line-shared loops in Florida. The Commission should evaluate proposals for line-sharing-related network elements and interconnection arrangements in light of the public policy imperative to promote advanced services, as stated in Section 706 of the Act. This proceeding offers the Commission an opportunity to secure an important benefit of the Act for all Florida consumers — the delivery of innovative services. Adoption of the Act would have made little sense if Congress did not envision

that a competitive local exchange market would deliver to Florida consumers more innovative, improved services, at better prices, than did the previous single-provider market.

Unless the Commission limits BellSouth to the recovery of efficient levels of costs, BellSouth can seriously harm Covad and substantially slow the deployment of advanced services in Florida. The potential for Covad to accelerate the delivery of competitive benefits to consumers of DSL-based services depends on Covad's ability to obtain access to customers as efficiently as possible on terms and conditions that place Covad on an even competitive footing with BellSouth (or its advanced services affiliates) both now and in the future.

Line sharing is a prime example of this principle. Until the FCC ordered otherwise, incumbents reserved for themselves (or their data affiliates) the opportunity to provide DSL-based services over the same lines that they use to provide voice services. By denying Covad and other competitors the opportunity to line share, incumbents acted on their self-interest and leveraged their control of access to end users into dominance of emerging markets for new telecommunications services such as DSL-based services. Thus, while competitors were forced to purchase a separate, stand-alone loop to provide DSL, BellSouth was aggressively promoting its consumer DSL offering that is provided over a single loop, shared with the voice traffic. The manner in which the Commission resolves issues related to the terms, conditions and prices for

line sharing will substantially affect the ability of new entrants to compete with BellSouth, especially in providing residential and small business customers with DSL-based services.

Q. What steps should the Commission take to facilitate Covad's offering of competitive DSL-based services in Florida?

A. The key steps the Commission must take to facilitate Covad's offering of these services are the following:

First, the Commission should adopt recurring and nonrecurring charges for each line-sharing element and interconnection arrangement that reflect a rigorous application of non-discrimination and forward-looking, efficient economic costing principles. Prices consistent with these principles would assume efficient costs based on the placement of the splitter on the Main Distribution Frame ("MDF") and use of efficient methods, procedures, and materials for line sharing. The Commission should not, for example, allow BellSouth to impose the cost of unnecessary cross connections, test points or bay/frame terminations on its competitors.

Second, the Commission should require BellSouth to offer Covad a full menu of line-sharing elements and interconnection arrangements that reflects all technically feasible alternatives. These alternatives should include providing line sharing over fiber-fed loops.

Third, the Commission should establish non-discriminatory terms and conditions for line sharing. These terms and conditions include requiring BellSouth to provide line sharing in a reasonable interval and to provide Covad with full access to the line shared loops for testing purposes.

III. THE COMMISSION SHOULD BASE RECURRING AND NONRECURRING CHARGES FOR LINE-SHARING ELEMENTS ON THE FORWARD-LOOKING COSTS OF AN EFFICIENT NETWORK DESIGN.

Q. What is line sharing?

A. Line sharing is the use of a single loop to provide both voice and certain high-bandwidth xDSL digital transmission capabilities between a customer's premises and the central office.

Q. What consumer benefits can be derived from line sharing?

A. Consumers — particularly residential and small business customers — can obtain significant benefits from line-sharing arrangements, because all voice and data needs can be met using a single loop. As the FCC noted, the economic characteristics of residential customers are less likely to support the availability of competitively provided advanced services absent access to the high-bandwidth portion of the local loop. [*Line Sharing Order* at ¶ 25.] Line sharing reduces the cost and time required to install or activate additional services into a consumer's location. Second, line sharing conserves limited outside plant resources and

avoids the risk that a lack of facilities will prevent competitors from serving consumer data transmission needs because consumers will not require a second loop to provide full-time data service.

Third, if BellSouth properly costs and prices the network elements that Covad needs for line sharing, consumers will get the lower prices, improved service quality and innovation that result from a more competitive market for broadband services. Proper cost-based pricing of line-sharing elements will enable Covad to compete on an equal footing with BellSouth; consumers will be the ultimate beneficiaries as competition forces both competitors and incumbents to pass along the cost savings attributable to offering DSL-based service over an existing plain old telephone service ("POTS") line.

Covad plans to use line sharing to accelerate its deployment of advanced services to residential end users in Florida. Indeed, Covad is working earnestly with BellSouth to get line-sharing orders successfully processed and provisioned in Florida. The ability to deploy line sharing more broadly to consumers in Florida depends on the Commission establishing reasonable prices, terms and conditions.

Q. Does BellSouth use line sharing to provision its advanced services?

A. Yes. BellSouth has been line sharing voice and DSL-based services ever since it first deployed retail DSL-based service, more than two years ago.

Q. Is Covad on an equal footing with BellSouth with regard to line sharing?

A. Unfortunately, no. The ability to provide both voice and data on a single loop confers a huge competitive advantage on BellSouth, both because provisioning times are greatly reduced and because deployment of a second separate loop to provide DSL-based services is not necessary. BellSouth has enjoyed this competitive advantage for over two years. At the same time, BellSouth required competitors to purchase stand-alone loops for DSL with extreme nonrecurring charges. This competitive advantage makes it extremely difficult for competitors to "catch up." This is why it is so important that the Commission closely scrutinize the terms and conditions under which BellSouth is making line sharing available to Covad.

Q. What are the technically feasible options for Covad to provide DSL in a line-sharing mode in BellSouth's existing network?

A. The technically feasible options for line sharing differ depending on whether BellSouth's existing loop facility is all-copper from the customer premises to the central office ("home-run copper") or copper from the customer premises to a DLC facility and then fiber from the DLC to the central office ("fiber-fed loop").

In the home-run copper scenario, the technically feasible options include the placement of a Covad-owned splitter in Covad's collocation arrangement, the placement of a splitter in a common area of the central office, and the placement of the splitter directly on the MDF. Splitters placed in a common area or on the MDF can be either BellSouth- or Covad-owned.

The MDF-mounted splitter option is the most efficient method for providing line sharing over home-run copper. Thus, under forward-looking economic principles, this arrangement should serve as the basis for determining the costs and prices for tie cables and jumpers to the splitter, even if BellSouth declines to make such a placement option available.

Q. What line-sharing prices should the Commission establish at this time?

A. At this time, we are only asking the Commission to set prices of rate elements for line sharing over home-run copper. However, we request that the Commission order BellSouth to produce proposed terms and costs for line sharing over fiber-fed loops, along with supporting testimony and workpapers, in the near future. The Commission should condition BellSouth's ability to deploy fiber-fed DSL for itself or its affiliates on the successful adoption of terms, conditions and prices that would permit competitors to have nondiscriminatory access to the new technology.

Q. How is line sharing accomplished in a central office?

A. The copper loop enters the central office carrying both the voice and data signals simultaneously, and passes through a distribution frame to the splitter. From the splitter, the voice signal travels back to the distribution frame, where it is routed to the voice switch. The data signal continues from the splitter to the data competitor's collocation equipment, where it is multiplexed by the digital subscriber line access multiplexer ("DSLAM") and connected to a packet

switched network. With an MDF-mounted splitter, simple jumper wires make the connections from the loop to the splitter and from the splitter to the end user's pre-existing connection to BellSouth's voice switch. A wire pair on a tie cable completes the link from the splitter to Covad's collocated arrangement. In some offices, BellSouth may have deployed a "COSMIC" frame. If a COSMIC frame is in place, current technology does not allow the splitter to be placed directly on that frame, so the splitter must be mounted elsewhere, unless BellSouth places cross-connect appearances for the splitters in the miscellaneous panels of the COSMIC modules.

Moreover, on an average basis, the costs for a forward-looking arrangement deploying a "COSMIC" frame should not be significantly higher than those for an MDF-mounted splitter arrangement.

Issue 16: Where Should the Splitters Be Located in the Central Office?

Q. What is your proposal regarding splitter placement in the central office?

A. We propose that the splitter either be placed on the MDF or within a minimal distance (*e.g.*, 25 feet) of the distribution frame. This gives BellSouth added flexibility in situations where BellSouth can show that it would place a COSMIC frame on a forward-looking basis.

Q. Why is your recommended splitter placement important?

A. The most important aspect of this provisioning process is that BellSouth's choices about efficient placement of the splitter can dramatically increase the cost of line sharing through cable costs, cable placement expenses, loading factors, cross connections, and related charges. Our proposal is to place the splitter on the MDF or within 25 feet of the MDF. In the case of the COSMIC frame, the splitter should be placed as close as possible to the frame unless the splitter cross-connect capability has been incorporated into the COSMIC frame modules, as discussed earlier in our testimony. This creates the most efficient network architecture.

Q. How can line sharing most efficiently be accomplished?

A. The most efficient network configuration and practices would locate the splitter on a MDF where the local loop enters the central office. In the case of the COSMIC frame, the splitter should be placed as close as possible to the frame. Early BellSouth line-sharing proposals indicate that BellSouth originally planned to place the splitter on the MDF. Subsequent testimony by BellSouth witnesses indicates that BellSouth later changed its mind regarding splitter placement, although it is not clear why. One explanation given by BellSouth is that placing the splitter on the MDF was not feasible because of BellSouth's use of a bantam test jack in conjunction with the splitter in line-sharing arrangements. The bantam test jack is a feature that BellSouth added to splitters for testing purposes. It was not requested by Covad or other competitors and has not been used by

other incumbents. The bantam test jack is not necessary for line sharing, and Covad should not have to pay for this additional expense.

Q. Please describe how many tie cables and cross connects (jumpers) are required when the splitter is located on the MDF, the most efficient configuration.

A. BellSouth can provide line sharing by placing the splitter on the MDF by installing frame-mountable splitter blocks (each "splitter block" is capable of serving sixteen lines) on the horizontal side of the MDF ("HMDF"). In this installation, the data terminals (the termination point for the data line) on the splitter block would be cabled, or hardwired, directly to the DSLAM in Covad's collocation area.

To deliver a loop for line sharing under this network configuration, BellSouth would need to disconnect the cable pair cross connect that connected the original POTS line from its termination on the vertical side of the MDF ("VMDF") to the HMDF terminal block that corresponds to the voice switch. BellSouth would install a new cross connect from the customer's cable pair on the VMDF to the data/voice terminal on the splitter block. BellSouth would also install a new cross connect between the voice terminal on the splitter block and BellSouth switching equipment terminal block, which is also located on the HMDF.

As we stated above, placement of the splitter on the MDF eliminates unnecessary cabling and other costs associated with splitter placement elsewhere.

With this configuration, BellSouth's forward-looking cost should include only one wire-pair on a tie-cable to Covad's DSLAM, placing two jumper wire cross connects in the MDF and removing one jumper wire cross connect on the MDF.

Although not the most efficient arrangement, locating the splitter near the MDF (within 25 feet) should only increase costs by a small amount.

Q. How does placing the splitter anywhere other than at or nearby the MDF affect line sharing?

A. Splitter placements that are further from the MDF have two major and very detrimental effects. First, placing the splitter away from the MDF requires more tie cable, support structure and pathways to be designed, installed and maintained, which adds to the cost of splitter placement. The further away from the MDF, the longer the tie cables must be, and therefore the more expensive the tie cables are for the competitor. Moreover, with some incumbent-proposed line-sharing configurations, additional cross connects are frequently added, increasing the likelihood of trouble/failure. Additional, unnecessary cross connections add significantly to the overall cost of line sharing, diminishing the economic benefits of this very low-cost method of providing DSL-based service.

Second, the length of the tie cable must be added on to the total length of the loop to determine whether DSL-based services can be offered at all and, if so, at what speed. Most technology to provide ADSL is limited to loops of no more than about 18,000 feet; thus, in marginal cases, a long tie cable inside the central office could preclude Covad from offering line-shared DSL service to a

customer. For example, if BellSouth places the splitter on an entirely different floor from the MDF, it could easily require one thousand feet of tie cable. This means that Covad could only service customers 17,000 feet or less from the central office. Covad wants to deliver DSL to the maximum number of consumers possible with current technology; BellSouth's chosen configuration would, in that case, prohibit it from doing so.

Even where loop length does not preclude line sharing entirely, a long tie cable inside the central office restricts the speed of the service that Covad can provide to its customers and thus lowers the value of that service to the consumer.

Q. Should the Commission use the frame-mounted splitter assumption in developing costs and prices for line sharing?

A. Yes. Under forward-looking economic principles, the Commission should assume that BellSouth places the splitter in an efficient, cost-minimizing location, even if BellSouth declines to make such a placement option available to Covad. BellSouth has unilateral control over the placement of splitters in its central office and can use that control to convey competitive advantages to itself or its affiliates. For example, BellSouth could limit the conditions under which it allows splitter placement at the MDF in such a way that only BellSouth or an affiliate could qualify for this efficient option. The Commission should take steps to prevent BellSouth from exploiting its monopoly control over splitter placement to disadvantage rivals such as Covad.

If BellSouth decides that splitters must be placed in locations that necessitate the use of more tie cables or the placement and removal of more jumpers than would be necessary in an efficient MDF-mounted splitter configuration, BellSouth should be deemed to be the "cost causer" of the increased number of tie cables and jumpers and should bear that cost, especially because Covad bears the risk of service disruptions caused by alternate splitter placement.

The Commission should order prices for cross connections and tie cables that give BellSouth the incentive to choose the efficient splitter placement option.

Q. Have Covad and BellSouth agreed on allowing Covad the option to place its own splitter in its own collocation space?

A. Yes. BellSouth and Covad have agreed that Covad should have this option. BellSouth will make this option available within 60 days of a joint test of that arrangement.

Q. In other cost dockets, has BellSouth proposed to charge competitors for line-sharing splitters, even when Covad buys its own splitter and places it in its own collocation space?

A. Incredibly, yes. Once BellSouth files its cost study, we will examine these proposed charges in detail.

Q. Please describe how many tie cables and cross connects (jumpers) are required when a splitter is placed in Covad's collocation space?

A. When Covad places the splitter within its own physical collocation area, Covad is responsible for cabling the data port on the splitter to Covad's DSL equipment. The voice/data ports and the voice ports on the splitter would be cabled directly to the connecting blocks located on the HMDF.

For this configuration, all it will take to deliver a loop for line sharing is the removal of one cross connect and the installation of two cross connects, just as we described for the installation of a line through a frame-mountable splitter. The only difference between this installation and an installation based on a frame-mountable splitter is that the cross connect wires must be connected to connecting blocks on the HMDF instead of to a splitter block. In addition, this option will require two wire pairs on the tie cable from the MDF to Covad's collocation arrangement (one to carry the combined voice and data signals to Covad's splitter and one to return the voice-only signal from the splitter to the MDF).

Regardless of the tie cables required, however, if BellSouth does not offer the more efficient frame-mounted splitter option, the costs for this collocation option should be capped by the costs of the efficient frame-mounted arrangement.

Q. Please summarize the line-sharing arrangement options for which you will propose prices.

A. The options are as follows:

- *BellSouth-owned splitter mounted on the MDF* — This arrangement involves recurring costs for splitter investment, installation and maintenance, as well as nonrecurring costs for the removal of one jumper and the placement of two jumpers.
- *Covad-owned splitter mounted on the MDF* — This arrangement involves recurring costs for splitter maintenance only (because Covad would be responsible for splitter investment). In addition, it involves nonrecurring costs for the installation of the splitter, the removal of one jumper and the placement of two jumpers.
- *Covad-owned splitter in Covad's collocation area* — This arrangement involves no recurring costs for BellSouth, because the splitter will be owned and maintained by Covad in Covad's own collocation space. It does involve nonrecurring costs for the placement of two jumpers, the removal of one jumper and the placement of two tie cables. (The Commission should only create a separate cost-based price for this option if BellSouth offers the MDF-mounted splitter options, but Covad chooses to locate its splitter in its collocation area. As we noted above, if BellSouth does not offer an efficient MDF-mounted splitter option, then prices for whatever configurations BellSouth does make available should all reflect the more efficient MDF-mounted splitter configuration.)

Issue 24: Are the Rates Proposed by BellSouth for Unbundled Loops and Line Sharing Compliant with TELRIC Pricing?

Q. Has BellSouth provided to Covad a cost study supporting its proposed rates for line sharing in Florida?

A. No. We expect that BellSouth will submit this study with its direct testimony in this docket.

Q. What costs are associated with providing the high-frequency spectrum of a local loop?

A. None. Pursuant to the FCC's *Line Sharing Order* in CC Docket 98-147, incumbent local exchange carriers must make the high-bandwidth portion of the local loop available to new entrants so that they may offer DSL-based services in a line-sharing mode. [*Line Sharing Order* at ¶ 26.] The FCC recommended in the *Line Sharing Order* that no cost should be associated with providing the high-frequency spectrum of the loop. Subsequently, in filings in Georgia, North Carolina and elsewhere BellSouth has supported a zero cost assignment to the high-bandwidth portion of the loop. That is the correct assignment. Therefore, it does not appear that BellSouth and Covad have a dispute concerning that component of the line-sharing cost.

Q. How do you recommend that the Commission set prices for unbundled network elements and interconnection arrangements related to line sharing over home-run copper?

A. We recommend that the Commission adopt the prices presented in Exhibit _____ (ERYK/JPR-3) for the components of line-sharing over home-run copper, with

any necessary adjustments to reflect the final assumptions that the Commission adopted for relevant inputs in the recently decided UNE pricing docket.

Without more information from BellSouth, we are unable to prepare a cost study to address the pricing for line sharing over fiber-fed loops. The Commission should establish a process to determine the appropriate pricing, terms and conditions for fiber-fed DSL-capable loops.

Q. How did you develop the cost basis for the prices shown in Exhibit _____ (ERYK/JPR-3)?

A. Exhibit _____ (ERYK/JPR-4) to this testimony provides the development of the prices presented in Exhibit _____ (ERYK/JPR-3). We have stated the monthly recurring charge for a BellSouth-owned-and-installed splitter per splitter port, based on the capital and operating costs for a 96-line splitter. In calculating the underlying costs, we have used information that we believe to be specific to BellSouth wherever possible, including labor rates. Where we did not have BellSouth-specific inputs, we used proxy values. The splitter investment itself is a publicly available figure from a Bell Atlantic - New York cost study and should be representative of the prices that incumbent local exchange carriers pay for such equipment purchased in quantity. The installation and operation expenses reflect subject matter expert opinion from engineers familiar with this type of equipment, including Mr. Riolo.

To arrive at a proposed price, we considered a range of reasonable options for the depreciation life of a splitter. The proposed price is sufficient to recover

the splitter costs based on a depreciation life as low as five years, with an allowance for the installation and operation expenses endorsed by subject matter engineering experts. In fact, the FCC's currently prescribed life for digital circuit equipment is 11 to 13 years. [*Report and Order in CC Docket No. 98-137, Memorandum Opinion and Order in ASD 98-91, FCC 99-397*, adopted December 17, 1999, released December 30, 1999, Appendix B.] Based on a depreciation life of 11 years (the low end of the FCC-prescribed range), the resulting prices for the splitter would be considerably lower: As shown in Exhibit _____ (ERYK/JPR-4), the resulting splitter price per line derived using an 11-year life is $0.59.

The illustrative prices shown above include a Florida-specific common cost markup of 6.24%. [Staff Recommendation in Docket No. 990649-TP at 352.] We have not conducted an independent review of the common cost markup, and recognize that this value (and possibly other Florida-specific inputs that we have used) may change when the Commission issues its final decision in the UNE pricing docket. We recommend that the input values used to calculate line-sharing prices, including the common cost markup, be conformed to the final Commission-adopted values in Docket No. 990649-TP. We will prepare a revised Exhibit showing the recalculated prices using those input values once the Commission's final decision becomes available for our review.

The nonrecurring charges for placing and removing jumpers are stated on a per jumper basis. The underlying costs reflect Mr. Riolo's expert opinion as to the work times required.

Q. How do you propose that the jumper and tie-cable prices be applied?

A. Regardless of the network configuration that BellSouth chooses for the placement of splitters, the prices that BellSouth charges Covad for jumper placement/removal and tie cables should reflect an efficient, cost-minimizing configuration, subject to the constraint that the proposed configuration is achievable. This principle applies whether BellSouth, one of its affiliates, or a competitor owns the splitter.

BellSouth could choose to place splitters at or near its MDF. In Mr. Riolo's engineering judgment, this scenario is entirely feasible and is the most efficient, lowest cost configuration. Thus, we recommend that the Commission base pricing for jumper placement/removal and tie cables on this best practices scenario, regardless of the actual splitter placement that BellSouth imposes on advanced services competitors.

This pricing rule is consistent with forward-looking economic principles and the outcome that the FCC found presumptively reasonable in its *Line Sharing Order,* in which the FCC established splitter placement within the MDF as the pricing benchmark. The FCC stated that:

> We would expect that the costs of installing cross connects for xDSL services in general would be the same as for cross

> connecting loops to the competitive LECs' collocated facilities, particularly where the splitter is located within the incumbent LEC's MDF. Accordingly, we find it reasonable to establish a presumption that, where the splitter is located within the incumbent LECs' MDF, the cost for a cross connect for entire loops and for the high frequency portions of loops should be the same. We would expect the states to examine carefully any assessment of costs for cross connections for xDSL services that are in excess of the costs of connecting loops to a competitive LECs' collocated facilities where the splitter is located within the MDF. If the splitter is not located within the incumbent LEC's MDF, however, then we would expect the states to allow the incumbent LEC to adjust the charge for cross connecting the competitive LEC's xDSL equipment to the incumbent LECs' facilities to reflect any cost differences arising from the different location of the splitter, compared to the MDF. We would expect that this amount would be only minimally higher than for cross connecting a splitter located within the MDF to the competitive LEC's xDSL equipment. [*Line Sharing Order* at ¶ 145.]

Although the FCC allows for the possibility of some increment of cost for splitter placement other than at the MDF, the clear expectation is that other

placements would result in costs "only minimally higher" than the cost of the MDF placement scenario.

Q. In conclusion, what prices do you proposed for each line-sharing-related element you have studied?

A. For the high-frequency portion of the line-shared loop, the cost and price should be zero. For the per-line activation non-recurring, the price should be $11.17 (first) or $8.19 (additional), plus the appropriate tie cable charges (per Covad's Interconnection Agreement with BellSouth). The remaining recurring and nonrecurring charges should be as follows for each line-sharing arrangement:

- *BellSouth-owned splitter mounted on the MDF* — The monthly recurring price should be $0.89 per line. Thus, for the 8-, 24-, 96-line increments Covad and BellSouth have agreed upon, the monthly recurring prices would be $7.12, $21.36, and $85.44, respectively. There are no nonrecurring charges associated with this option other than the per-line activation charge, because splitter installation costs are included in the recurring charge.
- *Covad-owned splitter mounted on the MDF* — The monthly recurring price should be $0.10 per line and the nonrecurring charges should be $0.26 per line or $22.33 per shelf. Thus, for the 8-, 24-, and 96-line increments Covad and BellSouth have agreed upon, the monthly recurring prices would be $0.80, $2.40, and $9.60, and the nonrecurring splitter installation charges would be $2.08, $6.24 and $22.33, respectively.

- *Covad-owned splitter in Covad's collocation area* — There are no monthly recurring charges associated with this arrangement and no nonrecurring charges other than the per-line activation charge.

IV. THE COMMISSION SHOULD ESTABLISH NON-DISCRIMINATORY TERMS AND CONDITIONS FOR LINE SHARING.

Issue 18: What Should the Provisioning Interval Be for the Line Sharing Unbundled Network Element?

Q. How long does it take to provision a line-shared loop?

A. If the splitter is properly installed as described in our testimony, the only physical work required for the provisioning of a line-shared loop is wiring the splitter configuration into the existing service, which involves removing one cross connect on the MDF and replacing it with two new cross connects. This process should easily be accomplished in less than 10 minutes. No additional time or work is necessary. Line sharing does not require any work to be performed outside of the central office, and the existing customer telephone number and cable pair are both reused.

Q. How long, then, should it take BellSouth to fill a loop order for line sharing?

A. It should take BellSouth no more than 24 hours to provision a loop that does not require deconditioning. Given that the physical process required to provision the loop takes only 10 minutes, there is no reason for BellSouth to require more than

24 hours to complete that process. BellSouth became legally obligated to provision line sharing as of June 6, 2000. BellSouth should be making constant improvements in its processes such that it could provision a line-shared loop in 24 hours. Recognizing that this is significantly faster than BellSouth in Florida currently provisions line-shared loops, we propose a "step-down" process to drive the final interval to 24 hours within two months of the Order being issued in this docket. Under this proposal, BellSouth would provision loops first within 3 days (from Day 1 to Day 30 after the Order is issued), then within 2 days (from Day 31 to Day 60) and, finally, within 24 hours, beginning Day 61 after the Order. Five business days is an appropriate interval for provisioning when deconditioning is required. The same provisioning intervals should apply whether the existing loop is being used to provide voice only, or the loop is already supporting both voice and ADSL service from BellSouth and another competitor.

Q. Have any other states adopted the phased-in approach that you advocate for the provisioning intervals for the high-bandwidth portion of the loop?

A. Yes. The Illinois Commerce Commission recognized that, given the very limited work required to provision a line-shared loop for DSL, a phased-in approach to line-sharing intervals was fair. These intervals give the incumbent the proper incentive to drive process improvements that facilitate rapid expansion of line sharing.

Issue 23: Should Covad Have Access to All Points on the Line-Shared Loop?

Q. Should BellSouth be required to provide competitors access to the shared physical loop for testing purposes?

A. Yes. It is essential that the Commission require BellSouth to provide Covad access to the shared physical loop for testing purposes. Where Covad owns the splitter and installs it in its collocation arrangement, clearly Covad is entitled to unencumbered access to that splitter to perform any necessary testing. However, for purposes of conducting testing associated with maintenance and repair, Covad must have direct, physical access to *any* loop containing a high-bandwidth network element at the point where the combined voice and data loop leaves the central office. In order to have such access, Covad must be able to attach test equipment to the line-shared loop's termination on BellSouth's MDF.

BellSouth has agreed in its Line Sharing Interconnection Agreements with Covad to give test access only to the splitters themselves through the bantam test jack. To test its data services, Covad must have direct physical access to the loop at all cross connect points of the splitter at the MDF or the intermediate frame. This level of access is required so that Covad can properly and expeditiously isolate problems on the loop. Either BellSouth or Covad may receive the trouble report from the customer, so each should have equal access to each appearance of the plant items comprising the circuit for test purposes. BellSouth utilizes this same test access to isolate trouble for its own customers.

Covad should be afforded the same opportunity to minimize customer outage and improve customer satisfaction.

V. THE COMMISSION SHOULD REQUIRE BELLSOUTH TO PROVIDE LINE SHARING OVER FIBER AS SOON AS IT IS FEASIBLE AND BEFORE BELLSOUTH ITSELF CAN USE SUCH TECHNOLOGY TO OFFER RETAIL SERVICES.

Q. Must DSL-based services be provided over all-copper loops?

A. No. To date, most DSL-based services have been deployed on loops that are copper end-to-end from the central office to the customer premises. However, DSL technologies are now evolving such that DSL-based services, including line sharing, may be deployed on fiber-fed loops. Such loops consist of copper facilities from the customer's premises to a mid-point equipment location, known as a remote terminal ("RT"), where signals are combined and transmitted over fiber optics from the RT to the central office. The ability to deliver DSL-based services over both all-copper and fiber-fed facilities will enable carriers to provide DSL-based services on a nearly ubiquitous basis and thus achieve greater economies of scope and scale in the delivery of advanced services.

Forward-looking DLC equipment allows carriers to provide DSL-based services over fiber/DLC loops with a suitable array of line cards, in the same manner as ISDN is provided over those facilities. Such DLCs are currently being deployed across the country. Indeed, at least one major incumbent, SBC Communications, Inc. ("SBC"), has determined that it can actually reduce its

costs by substantially accelerating the actual deployment of forward-looking DLC specifically in a manner that supports DSL-based services. SBC has announced that its "Project Pronto" initiative, which is designed to extend the reach of DSL-based services and other broadband services to the substantial majority of SBC end users using currently available DLC technology, will produce that benefit by delivering "annual cost structure improvements ... targeted to reach $1.5 billion by 2004 ... with network improvements paying for themselves on an NPV basis." [*See* SBC Investor Briefing No. 211, "SBC Announces Sweeping Broadband Initiative," October 18, 1999, at 10, which was included as Exhibit _____ (TLM-3) to the Direct and Rebuttal Testimony of Terry L. Murray, July 31, 2000, in FPSC Docket No. 990649-TP.]

Q. Why is this issue of line sharing over fiber of particular importance in Florida?

A. BellSouth has a high percentage of loops — over 40% — that are served over fiber in Florida. [*See* BellSouth's Response to Rhythms' Interrogatory 83, FPSC Docket No. 990649-TP.] To ignore issues related to the provision of DSL over such loops is to close off advanced services competition for a significant number of Floridians and places Covad at a substantial competitive disadvantage.

Q. Would access to line sharing on fiber-fed loops be important even if BellSouth were to offer Covad the alternative of using an all-copper loop

where BellSouth itself deployed the technology to provision line sharing over fiber?

A. Absolutely. Without a requirement for BellSouth to offer Covad line sharing over fiber in every location that BellSouth makes such a capability available to itself or to a BellSouth affiliate, Covad could experience far lower service quality than BellSouth or its affiliate. The copper distribution cable for both Covad's loop and the fiber-fed loop over which BellSouth or its affiliate provided DSL-based services could be the same cable. The signal that BellSouth or its affiliate generated at the RT for the fiber-fed loop would be far more powerful than the signal that Covad generated at the central office for the all-copper loop. Therefore, BellSouth's deployment of DSL over fiber could create the potential for serious electromagnetic interference with Covad's all-copper loop. The telecommunications industry's T1-E1 committee is presently reviewing this problem.

The important conclusion for the Commission to draw from this discussion is that BellSouth should not be permitted to deploy DSL over fiber unless and until it also permits Covad to obtain line sharing over fiber-fed loops. Any other solution would discriminate unfairly against Covad, in violation of the FCC's unbundling rules, which would permit the offering of spare copper as an alternative only if the competitor could use the spare copper to provide the same level of quality advanced services to its customer as BellSouth can provide to itself using DSL over fiber. [*Joint Application by SBC Communications Inc.,*

Southwestern Bell Tel. Co., and Southwestern Bell Communications Services, Inc., d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma, Memorandum Opinion and Order, FCC 01-29, CC Docket No. 00-217, at fn. 741 (rel. Jan. 22, 2001), citing to *UNE Remand Order*, 15 FCC Rcd at 3838-39.]

Q. Does BellSouth intend to provide its own broadband services and unbundled loops over fiber/DLC systems?

A. Yes. BellSouth admitted in the Commission's recent Investigation into Pricing of Unbundled Network Elements (Docket No. 990649-TP) that it is currently testing DLC systems for this purpose and that they will be available in the near future. [BellSouth's Response to Rhythms' Interrogatories 78-81, FPSC Docket No. 990649-TP.] BellSouth's "Loop Technology Deployment Directives" and "ADSL Planning Directives" provided in that same proceeding [RL: 98-09-019BT, December 8, 1998, provided in response to Rhythms' Request for Production of Documents 32, FPSC Docket No. 990649-TP, and RL:00-01-021BT, September 14, 2000 "ADSL Planning Directives," provided in response to AT&T's Request for Production of Documents 62, FPSC Docket No. 990649-TP, respectively] provide further evidence along these lines. *See* the Direct and Rebuttal Testimony of Joseph P. Riolo, FPSC Docket No. 990649-TP, July 31, 2000, at 55-58, for specific quotes.

Q. If BellSouth does not today deploy in Florida the full DLC capability necessary to offer line sharing over fiber-fed loops, should the Commission defer action on this issue until BellSouth does deploy such capability?

A. No. The Commission must begin to investigate these issues *before* BellSouth or any future BellSouth data affiliate begins to deploy fiber-based DSL service. While BellSouth perfects its delivery of DSL over fiber-fed loops, competitors will be locked out of those markets and left behind. Thus, the Commission will need to commence its investigation of prices, terms and conditions for line sharing over fiber well in advance of any BellSouth deployment of that technology on behalf of itself or its affiliates. Otherwise, BellSouth will have the market entirely to itself for a significant period of time. This is a crucial advantage given the high proportion of fiber/DLC loops in BellSouth's current network. Any delay will be severely detrimental to competition.

In its recent analysis in Docket No. 990649, the Commission staff noted that:

> ...staff believes BST is obligated, if technically feasible, to provide hybrid copper/fiber xDSL-capable loops to Data ALECs. For this reason, staff recommends that BST be required to submit a cost study for hybrid copper/fiber xDSL-capable loops within 120 days from the order in this proceeding. [Staff Recommendation in Docket No. 990649-TP at 86.]

We propose that this cost study deal not only with stand-alone DSL-capable loops, but also line sharing for hybrid copper/fiber loops. We recommend that the Commission prohibit BellSouth or its affiliates from providing DSL-based services over fiber facilities until BellSouth has set forth terms, conditions and prices that would allow unaffiliated competitors access to that capability for both stand-alone and line-shared loops and parties have had an opportunity to litigate the propriety of the BellSouth proposals. The Commission should not allow BellSouth to take advantage of any current uncertainty concerning the exact nature of the company's plans for DSL over fiber to provide itself or an affiliate a head start in marketing fiber-fed DSL-based services in the future.

Q. Have any state commissions recognized the importance of imposing such a requirement?

A. Yes. A growing number of state regulatory commissions have recognized the importance of ensuring that incumbents such as BellSouth cannot use the deployment of new technology that permits DSL (including line sharing) over fiber as a means to foreclose competition for advanced services. For example, the Illinois Commerce Commission recently found that:

> If this Commission does not require Ameritech to provide line-shared loops over Project Pronto DLC when technically feasible, the deployment of competitive advanced services, especially to residential and small business customers, would likely be

> diminished since Ameritech would retain monopoly power over a bottleneck facility. This Commission will not allow Project Pronto to be used as a roadblock to competition for advanced services in Illinois. Therefore, the Commission orders Ameritech to provide line sharing to Covad and Rhythms over Project Pronto DLC. [Arbitration Decision, Dockets 00-0312 and 00-0313, August 17, 2000, at 31. Project Pronto is the name that SBC Communications, Inc., has given to its initiative to deploy the technology necessary to offer DSL over fiber/DLC loops.]

Similarly, the Massachusetts Department of Telecommunications and Energy has expressed concern "that many Massachusetts customers may be shut out of the DSL market unless provisions are made to allow for line sharing over fiber-fed loops." Because the Massachusetts Department felt that "further investigation is necessary to determine whether some or all of the plug and play options advocated by CLECs are reasonable or whether the Department should restrict Verizon's tariff offering to one type of deployment such as plug and play," [Order, *Investigation by the Department on its own motion as to the propriety of the rates and charges set for in M.D.T.E. No. 17*, D.T.E. 98-57-Phase III at 80 (Sept. 29, 2000) ("Massachusetts *Order*") at 94-95.] the Department directed Verizon "to file a tariff that would enable CLECs to place or have Verizon place CLEC-purchased line cards in Verizon's DLC electronics at the RT (options 2

and 3 proposed by Covad) (see Covad Brief at 15) and to file a tariff for feeder subloops (see RR-RLI-8)." [Massachusetts *Order* at 95.] The Massachusetts Department ordered Verizon to file such a tariff now to mitigate the unfair competitive advantage that Verizon's data affiliates would enjoy if Verizon did not file such a tariff until after the company had actually deployed the technology that would allow for plug and play. [Massachusetts *Order* at 96.]

Other commissions in the states that Verizon serves have adopted orders that address similar concerns, even though Verizon (unlike SBC) is not yet actively offering DSL over fiber in its service territory. [*See* Public Service Commission of Maryland, Case No. 8842, Phase I, Order No. 76488, October 6, 2000, at 15-16; and New York Public Service Commission, Case 00-C-0127, Opinion No. 00-12, issued and effective, October 31,2000, at 25-27.]

Q. Is there a regulatory precedent for requiring incumbents to provide access both to stand-alone unbundled DSL-capable loops and line-sharing arrangements over loops with fiber feeder at prices based on forward-looking, economic cost?

A. Yes. The FCC has stated this unbundling requirement repeatedly with respect to both stand-alone DSL-capable loops and line-sharing arrangements over loops with fiber feeder. For example, in its *Line Sharing Order*, the FCC explained that:

> In the *Local Competition Third Report and Order,* we found that lack of access to subloop elements would preclude competitors

> from offering some broadband services to a significant market segment. Accordingly, we concluded that incumbent LECs must provide unbundled access to subloops, wherever technically feasible. [*Line Sharing Order* at ¶ 89, footnote omitted.

and further stated that:

> In the *Local Competition Third Report and Order*, we specifically noted that requesting carriers are functionally precluded from deploying xDSL services where incumbent carriers have deployed DLC systems unless the requesting carrier can otherwise obtain access to the customer's copper loop before the traffic is multiplexed at the incumbent's remote terminal. [*Id.* at ¶ 90.]

After revisiting its prior requirements, the FCC concluded that "incumbent LECs are required to unbundle the high frequency portion of the local loop even where the incumbent LEC's voice customer is served by DLC facilities." [*Id.* at ¶ 91.]

Hence, the FCC requires that BellSouth provide unbundled access to line sharing over fiber-fed loops at all points. The most efficient means of obtaining that access is for competitors to be able to integrate those elements with DSLAM and splitter functionality in an efficient, plug-and-play arrangement (as the service was designed to be offered).

Q. Does that conclude your direct testimony at this time?

A. Yes, it does.

ELIZABETH R. Y. KIENTZLE

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Ms. Kientzle has over ten years of experience in utility analysis and regulatory advocacy, primarily in the electric and local telecommunications markets. She specializes in cost analysis, cost modeling, and market price forecasting.

PROFESSIONAL EXPERIENCE

Independent Consultant (1997—PRESENT)
Represented competitive local exchange carriers in local telephone competition proceedings in California, Florida, Georgia, Maryland, New Jersey, New York, Pennsylvania, and Texas; analyzed costs of unbundled network elements, critiqued utility cost modeling and supported expert witness testimony. Assessed market opportunities in Sichuan Province, China for electric power developer. Forecast market prices of electricity in California's restructured electric market for merchant plant developers. Advised bidders in electric utility asset sales. Evaluated the air quality and economic benefits of building a new gas-fired power plant in northern California; testified before the California Energy Commission on those benefits in power plant siting proceeding. Supported expert witness testimony in electric restructuring proceedings in Maryland. Expert in electric utility simulation modeling, including the ELFIN, PROSYM and PROMOD production cost models.

Senior Consultant
Slater Consulting (1995—1997)
Forecast production cost benefits of electric utility merger. Assisted cogeneration plant in curtailment arbitration with Nevada Power. Analyzed utility filings in New York competitive opportunities proceeding. Evaluated utility assets in competitive Northeast market. Forecast electric prices for Northwest industrial customer. Advised power marketers in solicitation to provide power to group of electric cooperatives in Georgia.

Senior Associate
Morse, Richard, Weisenmiller & Associates (1990—1995)
Specialized in avoided cost methodology, marginal cost forecasting and resource planning. Analyzed various aspects of California's proposed industry restructuring, including transition costs, performance-based ratemaking, and transmission access. Performed due diligence in support of power plant financing. Investigated market opportunities for power producers. Testified before the California Public Utilities Commission and the Nevada Public Service Commission on avoided cost payments to qualifying facilities, quantification of avoided emission costs, and

production cost modeling. Developed and assessed bidding strategies for utility generation solicitations. Forecast marginal production costs for California and New York electric utilities. Prepared extensive analyses and testimony in support of power plant siting applications before the California Energy Commission. Supervised and trained other analysts on production cost modeling and avoided cost forecasting. Quantified potential utility savings as a result of California's Biennial Resource Plan Update solicitations. Analyzed natural gas procurement and transportation strategies for municipal electric utilities.

EXPERT WITNESS TESTIMONY/ DECLARATIONS

Testified on behalf of Calpine Corporation regarding the potential environmental and economic benefits of the Sutter Power Project in California Energy Commission siting case 97-AFC-2. (November 1998)

Declaration in support of the joint comments of AT&T and MCI regarding the recurring cost studies filed by GTE California, in California Public Utilities Commission's investigation into local telephone competition (R.93-04-003/I.93-04-002). (May and June 1998)

Filed testimony before the California Public Utilities Commission on behalf of Kelco Corporation regarding avoided cost payments to qualifying facilities in San Diego Gas & Electric's 1994 Energy Cost Adjustment Clause proceeding (Application 94-10-023). (January and February 1995)

Submitted testimony to the Public Service Commission of Nevada on behalf of the Nevada Geothermal Council in Sierra Pacific Power Company's proceeding to determine long-term avoided costs (PSCN Docket No. 94-1020) regarding avoided emission costs. (April and May 1994)

Testified before the Public Service Commission of Nevada on behalf of Yankee Caithness in its contract approval proceeding (Docket No. 91-12069) regarding the quantification of avoided emission costs. (October 1993)

Testified before the California Public Utilities Commission on behalf of the California Cogeneration Council in Pacific Gas & Electric's 1992 Energy Cost Adjustment Clause proceeding (Application 92-04-001) regarding the appropriate avoided costs payments to qualifying facilities. (July 1992)

EDUCATION

M.A., Mathematics, 1989, University of California, Berkeley
B.S., Mathematics, 1987, University of Illinois, Urbana-Champaign

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PROFESSIONAL EXPERIENCE

TELECOMMUNICATIONS CONSULTANT 1992-Present

- Expert witness before the FCC and State Public Utilities Commissions.
- Engineering witness on behalf of AT&T, MCI Worldcom, Covad Communications, Rhythms Links Inc., Bluestar, CLEC Coalition and Mid-Maine Telephone Company.
- Testified in 19 jurisdictions on behalf of clients.
- Provided consulting services for the design, project management and implementation of national DSL company.
- Provided consulting services to equipment staging, assembly and installation company.

NYNEX 1987-1992

- Between 1987 and 1992, I was the NYNEX Engineering Director-Long Island. In that position, I was responsible for budgeting, planning, engineering, provisioning, assignment and maintenance of telecommunications services for all customers on Long Island, N.Y.

NYNEX 1985-1987

- Between 1985 and 1987, I was NYNEX District Manager-Midtown Manhattan. I was responsible for budgeting, planning, engineering, provisioning, assignment and maintenance of telecommunications services for all customers in Midtown Manhattan.

NYNEX 1980-1985

- Between 1980 and 1985, I was NYNEX District Manager-Engineering Methods. In that capacity, I was responsible for the design, development, implementation and review of all outside plant methods and procedures for New York Telephone Company. Additionally, I was responsible for the procurement of all outside plant cable and apparatus for the New York Telephone Company.

AT & T 1978-1980

- Between 1978 and 1980, I was an AT&T District Manager, responsible for the design, development and documentation of various Bell System plans, and for audits and operational reviews of selected operating companies in matters of Outside Plant engineering, construction, assignment and repair strategy. I also served as the Project Team Leader at Bell Telephone Laboratories for the design and development of functional specifications for mechanized repair strategy systems.

NEW YORK TELEPHONE 1976-1978

- Between 1976 and 1978, I was District Manager-Outside Plant Analysis Center for New York Telephone Company. I was responsible for the analysis of all outside plant maintenance reports and the design, development and implementation of related mechanized reporting, analytical and dispatching systems. I was also responsible for the procurement of all outside plant cable and apparatus for the New York Telephone Company.

VARIOUS

- Between 1962 and 1978, I held a variety of technical and engineering positions of increasing responsibility at New York Telephone and Bell Telephone Laboratories. During 1967 and 1969, I was on military leave of absence from New York Telephone while serving in the U.S. Navy.

EDUCATION

I hold a B.S. in Electrical Engineering from City College of New York, and have taken a variety of specialized courses in telecommunications since college.

RECENT TESTIMONY

State of Maryland	Docket No. 8731 Phase I, Case No. 8842
Commonwealth of Virginia	Case No. PUC 970005, PUC 990101
State of New Jersey	Docket No. TX95120631 TX98010010
State of Pennsylvania	Docket No. A310203F0002 et al, MFSIII Docket No. R-00005261
State of West Virginia	Case Nos. 96-1516-T-PC 96-1561-T-PC 96-1009-T-PC 96-1533-T-T
State of California	Case Nos. R.93-04-003 I. 93-04-002
State of Wisconsin	Docket Nos. 6720-MA-104 3258-MA-101
District of Columbia	Formal Case No. 962
State of Delaware	PSC Docket No. 96-324
State of Iowa	Docket No. RPU 96-9
State of Hawaii	PUC Docket No. 7702
FCC	File No.E98-05, Docket No.98-147,96-98
State of Illinois	Docket No. 99-0593, 00-0312, 00-0313 98-0396, Advice No. 7280
State of New York	Case No. 98-C-1357
State of Massachusetts	DTE 98-57 III
State of Ohio	Case No. 96-922TP-COI
State of Michigan	Case NO U-12465
State of Florida	Docket No. 990649-TP
State of Georgia	Docket No. 11900-U

FPSC Docket No. 001797-TP
Kientzle/Riolo Exhibit _____ (ERYK/JPR-3)
Proposed Prices for Line Sharing over Home-Run Copper

Element (Home-Run Copper)	Price		
	Monthly Recurring	Nonrecurring	
		1st/Add'l Install	1st/Add'l Disconnect
HBLS UNE[1]	$0.00	N/A	N/A
BellSouth-Provided Splitter[2]	$0.89	N/A	N/A
Covad-Owned Splitter on BellSouth Frame:[3]			
Per 96-Line Splitter	N/A	$22.33	
Per Line[4]	$0.10	$0.26	N/A
Place Jumper[5]	N/A	$5.96 / $2.98	$5.21 / $2.23
Remove Jumper[6]	N/A	$2.23 / N/A	N/A
Tie Cables[7]	Per Covad/BellSouth Interconnection Agreement		

[1] The UNE price for access to the high-bandwidth portion of an all-copper or "home-run copper" loop.

[2] The UNE price for a BellSouth-provided and -owned splitter, which includes the per-line cost of installation.

[3] These are prices for a Covad-owned splitter if the splitter is installed on a BellSouth frame (as opposed to a frame that is part of Covad's collocation arrangement).

[4] The recurring price per line applies both when Covad purchases one line and when it purchases an entire shelf. The nonrecurring charge per line does not apply when Covad purchases a shelf (and therefore pays the per-shelf nonrecurring charge).

[5] This price is per jumper placement; to obtain a complete price, this price should be multiplied by the number of jumper placements required to efficiently provision each line-sharing arrangement that the Commission requires.

[6] This price is per jumper removal; to obtain a complete price, this price should be multiplied by the number of jumper disconnections required to efficiently provision each line-sharing arrangement that the Commission requires.

[7] The tie cable price in the Covad/BellSouth Interconnection Agreement should be multiplied by the relevant number of tie cables to obtain a total price for the number of tie cables required to efficiently provision each line-sharing arrangement.

Exhibit ERYK_JPR-4 Splitter and NRC Cost Development.xls

RESULTS SUMMARY AND USER VARIABLE INPUTS

Rate Element	Rate				
		Non-Recurring			
	Monthly Recurring	Install		Disconnect	
		1st	Additional	1st	Additional
Line Sharing on Copper					
1. HBLS UNE (per line)	$0.00	N.A.	N.A	N.A.	N.A.
2. ILEC-Owned Splitter -per line *	$0.89	N.A.	N A.	N.A.	N.A.
3. CLEC-Owned Splitter on ILEC Frame - Recurring per line	$0.10	N.A.	N.A.	N.A.	N.A.
4. CLEC-Owned Splitter on ILEC Frame - Install per Shelf	N.A.	$22.33	$22.33	N.A.	N.A.
5. CLEC-Owned Splitter on ILEC Frame - Install per Line	N.A.	$0.26	$0.26	N.A.	N.A.
6. Place Jumper	N.A.	$5.96	$2.98	$5.21	$2.23
7. Remove Jumper	N.A.	$2.23	N.A.	N.A.	N.A.

Note:
* This calculation uses an extremely conservative 5 year economic life. Assuming an 11 year economic life (the low end of the values for the Digital Circuit Equipment in the FCC's most recent depreciation decision) the ILEC-Owned Splitter price would become only: $0.59

User Variable Inputs

Common Cost Markup - Nonrecurring	6 24%	Staff Recommendation in FPSC Docket No. 990649-TP at 352
Common Cost Markup - Recurring	6.24%	Staff Recommendation in FPSC Docket No. 990649-TP at 352
Percent of Lines in Staffed COs	80%	Engineering subject matter expert assumption
Tasks per Trip to Non Staffed CO	4	Engineering subject matter expert assumption
Estimated C.O. Technician Direct Levelized Labor Rate	$42.04	BST 8/16/00 cost study filing, Appendix F, 99Lab_ .xls (group 431X), FPSC Docket No. 990649-TP
Cost of Equity	12.2%	Staff Recommendation in FPSC Docket No. 990649-TP at 202
Cost of Debt	7.3%	Staff Recommendation in FPSC Docket No. 990649-TP at 202
Equity share in Capital Structure	60%	Staff Recommendation in FPSC Docket No. 990649-TP at 202
Composite tax rate	38.57%	Staff Recommendation in FPSC Docket No. 990649-TP at 203

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Joint Direct Testimony and Exhibits of Elizabeth R. Y. Kientzle and Joseph P. Riolo on Behalf of Covad Communications Company has been furnished by (*) hand delivery this 23rd day of April, 2001, to the following:

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Attorneys for Covad Communications
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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition by DIECA Communications, Inc., d/b/a Covad Communications Company for Arbitration of Unresolved Issues in Interconnection Agreement with BellSouth Telecommunications, Inc.

Docket No. 001797-TP

Filed: April 23, 2001

/

JOINT DIRECT TESTIMONY AND EXHIBITS OF

ELIZABETH R. Y. KIENTZLE

AND

JOSEPH P. RIOLO

ON BEHALF OF COVAD COMMUNICATIONS COMPANY