

# AUSLEY & McMULLEN

ATTORNEYS AND COUNSELORS AT LAW

227 SOUTH CALHOUN STREET  
P.O. BOX 391 (ZIP 32302)  
TALLAHASSEE, FLORIDA 32301  
(850) 224-9115 FAX (850) 222-7560

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November 21, 2000

**BY HAND DELIVERY**

Ms. Blanca S. Bayo, Director  
Division of Records and Reporting  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0850

Re: Docket No. 990649-TP

Dear Ms. Bayo:

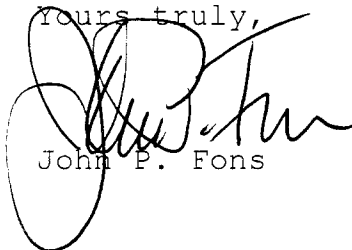
Enclosed for filing in the above docket are the original and fifteen (15) copies of Post-hearing Brief of Sprint Communications Company, Limited Partnership.

We are also submitting the Post-Hearing Brief on a 3.5" high-density diskette using Microsoft Word 97 format, Rich Text.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning the same to this writer.

Thank you for your assistance in this matter.

Yours truly,



John P. Fons

Enclosures

cc: All parties of record

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Mark Buechele  
Supra Telecom  
Koger Center-Ellis Bldg.  
Suite 200  
1311 Executive Center Drive  
Tallahassee, FL 33201-5027

Donna C. McNulty  
MCI WorldCom  
325 John Knox Road, Suite 105  
Tallahassee, FL 32303-4131

J. Jeffry Wahlen  
Ausley & McMullen  
P. O. Box 391  
Tallahassee, FL 32302

Hope G. Colantonio  
Cleartel Communications, Inc.  
1255 22<sup>nd</sup> St., N.W., 6<sup>th</sup> Floor  
Washington, DC 20037

Floyd R. Self  
Messer, Capareello & Self  
P. O. Box 1876  
Tallahassee, FL 32302

Karen Camechis  
Pennington, Moore, et al.  
215 S. Monroe Street  
Tallahassee, FL 32301

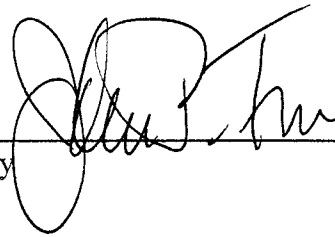
Stephen C. Reilly  
Office of Public Counsel  
c/o The Florida Legislature  
111 W. Madison St., Room 812  
Tallahassee, FL 32399-1400

Rodney L. Joyce  
Shook, Hardy & Bacon  
600 14<sup>th</sup> St., N.W., Suite 800  
Washington, DC 20005-2004

Jonathan Canis  
Kelley law Firm  
1200 19<sup>th</sup> St., N.W., 5<sup>th</sup> Floor  
Washington, DC 20036

Marsha Rule  
AT&T Communications  
101 N. Monroe St., Suite 700  
Tallahassee, FL 32301

Attorney



ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Investigation into  
pricing of unbundled network  
elements

DOCKET NO. 990649-TP  
FILED: November 21, 2000

**POST-HEARING BRIEF OF SPRINT  
COMMUNICATIONS COMPANY, LIMITED PARTNERSHIP**

Pursuant to Order No. PSC-00-1655-PHO-TP, issued September 18, 2000,<sup>1</sup> Sprint Communications Company, Limited Partnership (hereinafter referred to as "Sprint" or "Sprint – the CLEC"), submits this Post-Hearing Brief, stating as follows:

Preliminary Matters

This proceeding initially addressed the pricing of unbundled network elements ("UNEs"), including deaveraged prices, as well as recurring and non-recurring prices, by BellSouth Telecommunications, Inc. ("BellSouth"), Verizon Florida, Inc. ("Verizon") and Sprint-Florida, Inc. ("Sprint-Florida"). Each of these incumbent local exchange companies (ILECs) filed cost studies, testimony and other exhibits in support of proposed UNE prices. After the hearings in Phase I of the proceeding – addressing Issues 5, 6, 7(b), (c) and (d), 9(b) and 13 – were concluded on July 17, 2000, the Eighth Circuit Court of Appeals issued a decision in Iowa Utilities Bd. v. FCC, 219 F.3d 744 (8<sup>th</sup> Cir. Ct. App. 2000), in which the Court ruled that the Federal Communications Commission's ("FCC's") total element long run incremental cost (TELRIC) methodology rules – especially that loop costs be based upon a "hypothetical network" – violates the plain meaning of the Telecommunications Act of 1996. Based upon the

<sup>1</sup> Although the Order limits the Brief to 80 pages, because the Commission added two new legal issues to be briefed, the page limitation was expanded to 100 pages. Tr. 1297.

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uncertainty created by the Eighth Circuit's ruling – Sprint-Florida's cost study was developed in total compliance with the FCC's TELRIC methodology – Sprint-Florida filed its Motion to Bifurcate Proceeding, For a Continuance and Leave to Withdraw Cost Studies and Certain Testimony. Verizon filed a similar Motion. Sprint's Motion was granted – as was Verizon's. Order No. PSC-00-1486-PCO-TP, issued August 18, 2000. However, unlike Verizon, which completely withdrew from the proceeding, Sprint-the CLEC has remained in the proceeding in order to address BellSouth's proposed UNE prices, including its deaveraged prices and its recurring and non-recurring prices.<sup>2</sup>

This brief will address all of the issues – whether Phase I or Phase II – for which Sprint is taking a position. In addition to Sprint's Basic Position – which has been rewritten to reflect Sprint-the CLEC's participation in this proceeding – Sprint will state its position on each issue addressed and then provide its analysis of the record evidence supporting its position. Further, the Commission has asked the parties to address two legal issues. Sprint will address these two issues prior to its discussion of the Phase I and Phase II factual and policy issues.

### Statement of Positions on Issues and Brief

#### I. BASIC POSITION:

This Unbundled Network Element (“UNE”) pricing proceeding is now limited to BellSouth's proposed UNE prices, both recurring and non-recurring. These proposed prices must be judged in accordance with the requirements of the 1996 Telecommunications Act

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<sup>2</sup> In order to avoid confusion in the record, Sprint, at the request of Commission Staff, withdrew the testimony of all of its witnesses – which addressed ILEC and CLEC issues – and then refiled testimony of some of those witnesses – namely, James W. Sichter, Kent W. Dickerson, Steven M. McMahon and Talmage O. Cox, III – which addresses only Sprint-the CLEC-specific positions on the issues. Because some of the withdrawn testimony had already been inserted in the record as though read in Phase I, and certain related exhibits had been admitted into the record, that testimony and those exhibits were withdrawn with the Commission's permission. Tr. 3078-79.

("Act") and the FCC's extant Orders and Rules implementing that Act. Sprint, appearing now solely as a CLEC, has provided testimony and exhibits demonstrating that BellSouth's proposed UNE prices are inconsistent with the Act's requirements and the FCC's Orders and Rules, including the FCC's TELRIC methodology, in the following respects:

- BellSouth's UNE prices are not based upon forward-looking, real-world costs.
- BellSouth's costs are developed using inappropriate loadings, in-plant factors, and assumptions, including inflation.
- BellSouth's costs, while allegedly developed on a wire center-by-wire center basis, use factors, inputs and assumptions which substantially blur geographic-specific cost differences.
- BellSouth's loop deaveraging methodology is not cost-based, but is based, instead, upon an outdated, regulatory-imposed, rate-grouping process which totally ignores costs.
- BellSouth's proposed non-recurring prices, including loop conditioning prices, are grossly overstated because they are based upon assumptions and procedures which are neither realistic, forward-looking nor efficient.

In view of the overwhelming evidence presented by Sprint and the other new entrants in this proceeding - that BellSouth's proposed UNE prices are inconsistent with the Act and the FCC's Orders and Rules - the Commission should reject BellSouth's proposed recurring and non-recurring UNE prices. BellSouth should be required, instead, to submit revised UNE prices and non-recurring charges ("NRCs") that reflect real-world, geographically-specific, forward-looking costs incurred by an efficient provider of telecommunications services. Only by doing so will Florida be assured of the benefits of local competition contemplated by the Act.

II. LEGAL ISSUES.

**Issue A:** What is the current state of the law with regard to the use of a forward-looking cost methodology for computing rates for unbundled network elements?

**Position:** The Eighth Circuit decision rejecting the FCC's TELRIC standard, which includes the use of a hypothetical network, has been stayed, and a petition for certiorari has been filed with the U.S. Supreme Court. It is impossible to predict what action, if any, the U.S. Supreme Court will take on this petition, or how it will rule on the merits if it agrees to hear the appeal. In the meantime, the FCC rules regarding the use of TELRIC for setting rates for unbundled network elements are in full force and effect.

**Issue B:** Based on the current state of the law set forth in Issue A, what is the Commission's authority to establish rates for unbundled network elements at this time?

**Position:** The Commission's authority to establish UNE rates at this time is directed by the 1996 Act and the FCC's extant Orders and Rules.

III. FACTUAL AND POLICY ISSUES.

**Issue 1: What factors should the Commission consider in establishing rates and charges for UNEs (including deaveraged UNEs and UNE combinations)?**

**Position:** \*The factors which the Commission should consider are the forward-looking cost standards authorized by Section 252(d)(1) of the 1996 Telecommunications Act, the FCC's rules and orders implementing that section of the Act, and the court decisions interpreting the Act.\*

\* \* \* \*

Section 252(d)(1) of the Act sets forth the pricing standards for Interconnection and Unbundled Network Elements. Simply stated, the Act requires that prices be cost-based. The FCC, in turn, has concluded that this portion of the Act requires that the prices for UNEs be set at forward-looking economic costs. More specifically, the FCC adopted a version of total services long run incremental costs ("TSLRIC"), which, as noted previously, it refers to as TELRIC, to denote that the TSLRIC methodology is applied to the costing of discrete network elements rather than the services provided over that facility. (Sichter, Tr. 3084-85.) The FCC's rules (Part 51.505(a)) go on to define the forward-looking economic cost of an unbundled network element to be the sum of TELRIC and "a reasonable allocation of forward-looking common costs."

The forward-looking cost standard for UNEs provides a measure of the costs that would be incurred by an efficient supplier to provide a particular network element. Only by using this pricing standard will the appropriate pricing signals be given to new entrants to decide whether they need to "build" facilities rather than "buy" facilities. In other words, new entrants will be incented to build facilities where they can do so at lower costs than they would pay the ILEC for the equivalent UNEs, and to buy UNEs where the ILEC's prices for those UNEs are lower than the new entrant's cost of constructing those facilities. Sichter, Tr. 3087-88.

However, to the extent that UNE prices deviate from economically efficient levels, the new entrant's infrastructure investment decisions will be distorted. If, for example, BellSouth's UNE prices are set above cost, Sprint will be compelled to "build" the facilities, even though BellSouth can provide the facilities at a lower cost.

The FCC, and now the Courts, have made it abundantly clear that the only factors to be considered in setting UNE prices are forward-looking cost-related factors. UNE prices cannot reflect historical embedded costs, nor may the prices reflect so-called "market value" factors. BellSouth, however, is attempting to set UNE prices on a basis that is inconsistent with cost-based rates. Arguing that UNE prices must reflect retail rate levels and structures is not countenanced by the Act, the FCC Orders and Rules, or even the Courts. To the extent retail rate levels or rate structures are inconsistent with UNE prices, the correct approach is to restructure retail prices to bring them into conformity with UNE prices, not the other way around. Sichter, Tr. 3094.



**Issue 2: (a)                   What is the appropriate methodology to deaverage UNEs and what is the appropriate rate structure for deaveraged UNEs?**

**Position:** \*UNE prices should be deaveraged to the degree necessary to avoid significant deviations between the rate charged and the actual forward-looking costs of providing UNEs in specific geographic areas. Unlike BellSouth's "rate group" approach, rates should be deaveraged on wire center-by-wire center basis, with wire centers banded into zones using a 20 percent deviation criteria.\*

\* \* \* \*

As noted previously, the Act and the FCC Orders and Rules require that UNE prices be cost-based using a forward-looking TELRIC methodology, plus a reasonable share of forward-looking common costs. When UNE costs are developed on a company-specific basis, or a statewide average basis, those costs will fail to reflect the fact that for a number of UNEs the forward-looking costs are not uniform throughout an ILEC's service territory. For example, UNE loop costs will vary by wire center; those rural wire center costs can be considerably higher than more urban wire center costs.<sup>3</sup> Pricing UNEs whose costs vary by geographic areas without regard to the variance does not meet the requirements of the Act. Additionally, prices that significantly deviate from costs do not provide the correct marketplace signals to new entrants in their decision to "build" or "buy" facilities. Thus, deaveraging of UNEs is necessary to avoid the pricing distortions inherent in rate averaging. Sichtler, Tr. 3091-92.

BellSouth's proposal to use tariffed rate groups to establish three zones for UNE loops is not an appropriate basis for deaveraging loop prices. Not only are the tariffed rate groups not cost-based, BellSouth's proposed rate zones attempt to link UNE loop prices to retail rates which are not cost-based. BellSouth's witness Mr. Alphonso Varner contends that: (a) rates for basic

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<sup>3</sup> Sprint-Florida's loop costs range from a low of \$8.59 a month to a high of \$149.06 a month, while the average in Sprint-Florida's serving area is \$25.38. Sichtler, tr. 3091.

service historically have been “deaveraged” in an inverse relationship to costs; (b) UNE prices are based on costs and will be deaveraged in a direct relationship to cost; and (c) deaveraging will create loop prices that vary in the opposite direction from the prices for retail services. Varner, Tr. 44-45. His solution to this dilemma – “Deaveraging loop prices would result in lower rates in the urban area where retail prices are currently the highest. In rural areas, the reverse would be true.” Varner, Tr. 45 – is to use rate groups to establish three UNE loop price zones. According to Mr. Varner, “Utilizing local exchange rate groups to deaverage UNEs provides consistency between the structure of BellSouth’s retail, resale and UNE rates.” Varner, Tr. 47. While that statement may be factually correct, it does not provide a valid basis for disregarding the clear requirements of the Act and the FCC’s Orders and Rules.

In fact, Mr. Varner’s reading of the requirements of the Act and the FCC rules is totally wrong. He refers to FCC Rule 51.507(f) which, in part, provides “state commissions may use existing density-related zone pricing plans described in § 69.123 of this chapter, or other such cost-related zone plans established pursuant to state law.” (Emphasis added.) Sprint unquestionably agrees that this is what the FCC rules require, but points out that, contrary to Mr. Varner’s misreading of this rule, local exchange rate groups are anything but “density-related” or “cost-related” zone pricing plans. In fact, as pointed out earlier, Mr. Varner concedes that “the rates for basic service are deaveraged in an inverse relationship to costs.” Varner, Tr. 44. It would, therefore, be a perversion of the FCC’s rule to suggest that retail rate zones are “cost-related” zones.

As Exhibit 154, sponsored by Sprint’s witness, Mr. Sichtler, clearly demonstrates, BellSouth’s local exchange rate groups are not based upon the underlying costs of the wire centers within each of those rate groups. Consequently, BellSouth’s proposed banding includes high-cost wire centers in the lowest cost band, and low-cost wire centers in the higher cost bands.

Sichter, Tr. 3109-10. Charging different rates for loops that have the exact same costs, or charging a rate for one loop that is higher than the rate charged for a higher cost loop, is both discriminatory and inconsistent with the Act and the FCC's requirement for cost-based unbundled network elements. The fact that using cost-based zones may result in the prices in the rural zones being higher provides no basis for deviating from the FCC's requirements, especially when the alternative is to raise prices in the low-cost urban areas, thereby retarding competition in the low-cost areas. Ex. 107, page 14.

Not only does BellSouth propose a totally unacceptable deaveraged loop banding criteria, BellSouth's proposal further distorts the cost/price relationship by using only three (3) rate zones. By doing so, BellSouth simply blurs and distorts the intent of the deaveraging process, namely pricing UNE loops more in line with costs. BellSouth contends that only three rate zones are all that it is legally required to provide. BellSouth misreads the law. Contrary to BellSouth's reading of the law, the FCC has held that "a state may establish more than three zones where cost differences in geographic regions are such that it finds that additional zones are needed to adequately reflect the costs of interconnection and access to unbundled elements." First Report and Order FCC Docket No. 96-98, released August 8, 1996, paragraph 765. Sprint has demonstrated that in Florida more than three zones are necessary to adequately reflect cost differences between geographic regions. Ex. 107, pp. 15-16.

A more appropriate banding criteria has been proposed by Sprint. Under Sprint's banding proposal, the average rate for a rate zone should not deviate by more than 20% from the wire center forward-looking cost of that element for any wire center included in that zone. By following Sprint's criteria, eight zones would be required to map BellSouth's proposed wire center loop costs into rate zones. Sichter, Tr. 3110-11, Exhibit 154. The use of eight UNE rate zones is no more administratively complex than administering 10 or 12 retail rate groups.

(b) For which of the following UNEs should the Commission set deaveraged rates?

- (1) loops (all);
- (2) local switching;
- (3) interoffice transport (dedicated and shared);
- (4) other (including combinations).

**Position:** \*Although the forward-looking economic costs for unbundled loops, subloops, local switch ports and local switching usage, common and dedicated transport, and dark fiber all vary significantly by geographic area, Sprint requests that only the recurring costs of loops and related combinations be deaveraged.\*

\* \* \* \*

Despite Sprint's record evidence demonstrating that the recurring costs for unbundled loops, subloops, local switch ports and local switching usage, common and dedicated transport, and dark fiber all vary significantly by geographic area, Sprint now requests that the recurring costs of only unbundled loops and related combinations, such as enhanced extended links (EELs) be geographically deaveraged.<sup>4</sup> It became clear during this proceeding that Sprint alone submitted testimony and exhibits challenging BellSouth's position to deaverage only unbundled loops and related combinations. None of the other CLECs either requested or provided support for deaveraging additional UNEs. This situation, coupled with the fact that the cost studies performed by BellSouth provide insufficient data to permit the Commission to establish deaveraged rates for those UNEs, has convinced Sprint that no purpose would be served in

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<sup>4</sup> Sprint does not believe that there are significant geographical cost differences applicable to the UNE non-recurring costs and charges. Sichtler, Tr. 3100.

requiring BellSouth to file new, more detailed cost studies to support deaveraging additional UNEs.<sup>5</sup>

Additionally, several CLECs, as well as BellSouth, cited administrative complexity as a reason not to deaverage switching and transport elements. Sprint recognizes that this is a legitimate consideration. Again, because the CLECs have expressed no interest in wanting deaveraged switching and transport elements, Sprint will acquiesce to the averaging of those elements, there being no reason that any ILEC or the CLECs should incur the administrative burdens and costs of deaveraging those elements.

If the Commission adopts Sprint's position, then the Commission should also not require any ILEC to deaverage the cost of any UNE other than loops and related combinations.

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<sup>5</sup> Despite Sprint's decision to now acquiesce in the other parties' position that only loop UNEs need be geographically deaveraged, Sprint adheres to the position that BellSouth's switching and transport cost studies inappropriately rely upon statewide assumptions and factors rather than available geographic-specific data. As a result, BellSouth's cost studies blur geographic cost differences and make deaveraging impossible. For example, BellSouth's transport cost study fails adequately to address or develop, on a geographic-specific basis, demand information, the impact of terminal bandwidth or distance. Cox, Tr. 3214-17. In the future, BellSouth should be required to provide geographic-specific cost information for each unbundled element.

**Issue 3:**        (a)     **What are xDSL-capable loops?**

**Position:** \*At the current time, xDSL-capable loops are copper loops that are 18,000 feet in length or shorter and do not contain any devices which impede the xDSL frequency signaling such as repeaters, load coils or excessive bridged taps; or have been conditioned to remove such impeding devices.\*

\* \* \* \*

Currently, the xDSL technology requires a copper loop connecting the digital subscriber line access modems (“DSLAM”) with the customer’s premises. The copper loop cannot be behind a digital loop carrier (“DLC”), and it cannot contain any repeaters, load coils or excessive bridged taps. Dickerson, Tr. 3118-19.

There are technological developments underway, however, which may permit certain xDSL services to be provided behind certain types of DLCs. Ex. 108, p. 5. Additionally, there are DSLAM technologies available which allow the provision of xDSL services over copper loops which are in excess of 18,000 feet in length. Dickerson, Tr. 3119.

The fact that xDSL service currently requires a copper loop does not provide a basis for BellSouth to offer a copper-only UNE which must be used by digital CLECs, like Sprint, to provision xDSL services. As discussed in more detail in Sprint’s position on and analysis of Issue 7(a), BellSouth’s copper-only UNE strategy is unnecessary, ignores reality and increases the cost of a loop.

**(b)     Should a cost study for xDSL-capable loops make distinctions based on loop length and/or the particular DSL technology to be deployed?**

**Position:** \* Other than the 18,000 feet distinction and the need for conditioning, a cost study for xDSL-capable loops need not make any such distinction.\*

\* \* \* \*

The recurring cost study for xDSL-capable loops should not make any distinctions based upon loop length and/or the particular xDSL technology to be deployed. Dickerson, Tr. 3119-20. As discussed in Sprint's position on and its analysis of Issue 7(a), BellSouth's attempt to impose a "copper only" loop requirement on new entrants is based upon an erroneous assumption about network architecture and results in xDSL-capable loop prices which are higher than necessary.

However, there are logical distinctions in the development of the non-recurring cost studies which do need to reflect loop lengths. In particular, as will be discussed further in Sprint's position on and its analysis of Issue 11, Sprint believes that the line conditioning charges associated with the provisioning of xDSL-capable loops will depend upon whether the loop is longer or shorter than 18,000 feet. Dickerson, Tr. 3120.

**Issue 4:**      a)      Which subloop elements, if any, should be unbundled in this proceeding, and how should prices be set?

**Position:** No position.

                         (b)      How should access to such subloop elements be provided, and how should prices be set?

**Position:** No position.



**Issue 5:** For which signaling networks and call-related databases should rates be set?

**Position:** No position.

**Issue 6: Under what circumstances, if any, is it appropriate to recover non-recurring costs through recurring rates?**

**Position:** \*Absent compelling circumstances (i.e., evidence that high non-recurring charges are a barrier to entry), Sprint believes that non-recurring costs should be recovered through non-recurring rates.\*

\* \* \* \*

Although the FCC rules allow for the recovery of non-recurring costs through recurring rates, the general principle is that recurring costs should be recovered by recurring rates. Section 51.507(e) of the FCC Rules permits deviations from that general principle:

(e) State commissions may, where reasonable, require incumbent LECs to recover nonrecurring costs through recurring charges over a reasonable period of time. Nonrecurring charges shall be allocated efficiently among requesting telecommunications carriers, and shall not permit an incumbent LEC to recover more than the total forward-looking economic cost of providing the applicable element.

Absent compelling circumstances, Sprint believes that non-recurring costs should be recovered through non-recurring rates. Requiring non-recurring costs to be recovered through recurring charges raises a number of difficult policy and administrative issues. On the one hand, the incumbent LEC is financially exposed if the CLEC discontinues service before the non-recurring costs are fully recovered. On the other hand, the incumbent LEC could over-recover its non-recurring costs unless it tracked each service installation and reduced its recurring rate at the point where the non-recurring costs built into that recurring rate were fully recovered. To the extent that high non-recurring charges are a significant barrier to competitive entry, it may be appropriate to require at least a portion of those non-recurring charges to be recovered through recurring rates. Sichtler, Tr. 3102.

**Issue 7:** What are the appropriate assumptions and inputs for the following items to be used in the forward-looking recurring UNE cost studies?

- (a) network design (including customer location assumptions);
- (b) depreciation;
- (c) cost of capital;
- (d) tax rates;
- (e) structure sharing;
- (f) structure costs;
- (g) fill factors;
- (h) manholes;
- (i) fiber cable (material and placement costs);
- (j) copper cable (material and placement costs);
- (k) drops;
- (l) network interface devices;
- (m) digital loop carrier costs;
- (n) terminal costs;
- (o) switching costs and associated variables;
- (p) traffic data;
- (q) signaling system costs;
- (r) transport system costs and associated variables;
- (s) loadings;
- (t) expenses;
- (u) common costs;
- (v) other.

**Position:** Sprint has a position only on the following Issue 7 items: 7(a), (f), (i), (j) and (s).

### **Network Design**

\*7(a) “network design” includes BellSouth’s proposal for a “copper only” UNE loop. This “copper only” UNE loop is inappropriate. It erroneously presumes that xDSL will continue to be provided over copper only facilities and uses a network which is neither forward-looking nor real world.\*

\* \* \* \*

As previously discussed, Sprint acknowledges that currently xDSL-capable loops are defined as copper loops that are 18,000 feet in length and shorter and do not contain any devices which impede the xDSL frequency signaling such as repeaters, load coils or excessive bridged taps. Dickerson, Tr. 3118. BellSouth, in its pricing proposal, offers a copper only UNE loop

based upon a network design which assumes all copper local loops of unlimited length. This network design further assumes no pair gain devices, such as digital loop carrier devices. This radical departure from a forward-looking network is premised upon BellSouth's unfounded belief that data CLECs have either asked for, or will require, such a copper-only network to provide xDSL services for the foreseeable future. In response to this unfounded premise, BellSouth has proposed prices for a UNE loop that does not exist in reality, and if it did, would not be forward-looking and would not be least-cost. Exhibit No. 108, p. 11.

The record evidence demonstrates that a "copper only" UNE loop is not appropriate given the fact that technology has advanced to the point where there are line cards available which can be plugged into state-of-the-art next generation digital loop carrier devices (DLC), allowing xDSL services to be provisioned through digital loop carrier devices. There are, for example, devices offered by recognized vendors, such as Marconi, Advanced Fiber Communications and Nortel, which permit the provision of xDSL services, such as ADSL – with a 1.544 megabit per second data stream – over a next generation DLC system. Ex. 108, pp. 5-8. That being the case, BellSouth's copper only network design is not forward-looking, does not meet the least cost standard and does not make sense. In fact, modeling an entire wire center as though it was copper is totally inconsistent with reality, denies the existence of fiber fed DLCs and would inflate costs in an erroneous manner.

Rather than engaging in such an improbable exercise for the sake of pricing an xDSL-capable loop, BellSouth should be required to develop the xDSL-capable loop cost on the same basis as it develops cost for a voice grade UNE loop. In that case, the loop would be the same as a loop that has been provided over a fiber fed DLC, regardless of its length. In the words of Sprint's witness Mr. Dickerson, "The reality is every day BellSouth is selling POTS loops that

were modeled to be based on a fiber fed DLC network, and the reality is a certain percentage of those loops are copper.” Ex. 108, p. 14.

BellSouth should be required to predict cost for an xDSL-capable loop on the same basis as it predicts the cost for a two-wire loop. To the extent that conditioning may be required to remove inhibitors to make the loop xDSL-capable, cost-based non-recurring charges would apply in those instances. However, the prices developed should be the same for an xDSL-capable loop as they are for a two-wire unbundled loop.

**Structure Costs, etc.**

\*7(f) “structure costs” should be determined based upon forward-looking, geographic-specific costs. BellSouth has used inputs, factors and assumptions in developing structure costs which are neither realistic, forward-looking nor geographic-specific.

7(i)&(j) “cable (fiber and copper) placement costs” should be developed using forward-looking, geographic-specific costs. BellSouth has developed its placement costs using inputs, factors and assumptions which are not realistic, forward-looking or geographic-specific.

7(s) “loadings” should be developed on a forward-looking, geographic-specific basis. The method BellSouth uses to apply loadings distorts the cost variances between urban and rural wire centers and relies upon linear relationships that do not exist in the real world.\*

\* \* \* \*

As a practical matter, these items, namely, “structure costs,” “cable (fiber and copper) material and placement costs,” and “loadings,” need to be discussed together because BellSouth’s Cost study uses similar, inappropriate inputs, assumptions and factors for each of these cost elements. In particular, BellSouth’s cost studies produce inflated results because

BellSouth 1.) applies an inappropriate inflation factor to an average per unit cost, and 2.) inappropriately applies in-plant and structure related factors.

1. Inflation

In its UNE cost studies, BellSouth uses Telephone Plant Index (TPI) factors to adjust the material accounts to reflect the effects of inflation. As the record amply demonstrates, BellSouth's methodology inappropriately applies growth in access lines to its inflation calculation. The application of access line growth to an inflation factor is inappropriate and illogical.

The investments/costs to which BellSouth applies an inflation factor are unit costs. Dickerson, Tr. 3128. Access line growth appears as new units – not an inflationary adjustment to unit costs. Growth in access lines results in a larger number of cable pairs. Some portions of this growth will no doubt be served by existing aerial and underground structures, feeder and distribution routes thereby increasing structure cost economies of scope resulting in a lower per unit cost for those customers – not higher. Dickerson, Tr. 3128-29. Accordingly, including any loading factor on unit costs means that a competitor that buys a loop facility must share a burden applicable to BellSouth's or another competitor's growth even if it has no growth of its own. If facilities grow, additional units are subject to their own revenue streams. That growth should not be arbitrarily loaded onto any unit cost. Dickerson, Tr. 3129.

The proper way to perform these cost studies would be to identify the current vendor costs that BellSouth pays for state-of-the-art equipment items. These would be the least-cost, most efficient equipment items that BellSouth would deploy in its network on a forward-looking basis. Then, BellSouth should appropriately include the installation and engineering costs of those devices. BellSouth should also account for the expenses to operate that investment at current costs, and should divide it by current demand. Only by performing its study in this

manner will the costing process provide a proper matching of the demand levels that are being used to calculate current costs with the cost of current equipment. Dickerson, Tr. 3129, Ex. 108, p. 20. By embarking on a speculative bent as to what the cost of equipment will be in the future, BellSouth is just speculating, and speculation does not constitute factual evidence. Not only is the application of an inflation factor speculative, it is also inconsistent with this Commission's Order No. PSC-99-0068-FOF-TP issued in Docket No. 980696-TP, January 7, 1999, at page 159.

It is also clearly incorrect to be projecting equipment cost increases and operating expense increases associated with potential future demand growth, but yet turn around and divide those inflated costs with current demand levels. That is an absolute clear mismatch that serves to inaccurately increase unit costs. Ex. 108, p. 18. The fact of the matter is, if in the future equipment costs go up, the equipment vendors are extremely competitive, and the cost increases very well may be accompanied by changes in the capacity and enhanced capabilities of the equipment. The equipment may even be able to self-provision or self-diagnose problems that would result in labor cost reductions. Ex. 108, p. 18. Most importantly, again, it's an obvious mismatch to suggest the growth in access lines would inflate unit costs in a unit cost calculation when those grown units have not been included in the cost calculation.

The proper method of handling access line growth is to periodically recompute unit costs using total access lines. This means that on a two or three year timeframe basis, BellSouth should come back and refresh its cost study and update vendor costs, technology assumptions, demand quotations and all major cost determinants. By looking periodically at all the issues that will potentially change in the future, the analysis will capture technology changes, will capture the associated operational changes that often accompany technology changes, will also pick up increased or decreased units, and will pick up changes in the cost of technologies. Ex. 108, p.

20. All of that should be done simultaneously, not in a piecemeal fashion such that only one potential change, i.e., inflation, is reflected, which is what BellSouth has done. Sprint advocates that network investment expenses properly be matched to current vendor costs and current demand levels, in order to get an accurate unit cost calculation.

2. Loadings

As discussed in Ms. Caldwell's Direct Testimony, BellSouth applies loadings for engineering and installation ("In-Plants"), and poles and conduit among others, to the per unit investments developed in the BellSouth Telecommunications Loop Model (BSTLM) model.<sup>6</sup> Caldwell, Tr. 1157-60. While loadings for engineering, installation, poles, and conduit are certainly a necessary part of the cost of a loop, the method BellSouth uses to apply the loadings totally distorts the cost variance between urban and rural wire centers. BellSouth's per pair loadings result in the per pair costs of wire centers in higher density areas to be overstated while per pair costs in the rural areas are understated. Dickerson, Tr. 3131.

The BellSouth model assumes that as the number of pairs vary, so varies the cost of poles and conduit; and that all costs adjust at exactly the same rate. Caldwell, Tr. 1178-79. Costs in reality do not follow that uniform variance. Dickerson, Tr. 3131. The BSTLM has the ability to apply the loadings in a fashion that reflects reality. BellSouth should be required to use its model in a manner such that the resulting deaveraged costs better reflect reality.

BellSouth also has access to its actual costs for engineering, placement, and structure costs, but has chosen not to gather that information. The BSTLM has the ability to apply the actual engineering placement, and structure, related investments to the network built in BSTLM,

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<sup>6</sup> The factors are developed using state level relationships of the respective loadings to all applicable investments. The statewide loading factors are then applied to the unit investments from the BSTLM. For example, a statewide pole investment to aerial cable investment factor is applied to the average per unit aerial cable investment derived from BSTLM. Dickerson, Tr. 3130.



but BellSouth has chosen not to use its model's full capability. Dickerson, Tr. 3131. As a result, the costs are inaccurate. BellSouth should, therefore, be required to modify its costing methods to more accurately reflect its actual experience.

a. Engineering

Engineering costs do not vary with the number of cable pairs (or equivalent cable pairs) being placed, but with the number and types of cable sheaths that are determined necessary. In any given section of cable, it does not cost four times as much to engineer a 400 pair cable as it does a 100 pair cable. Dickerson, Tr. 3132. While costs per sheath may vary slightly, it is drastically different from the linear relationship BellSouth proposes.

Unfortunately, BellSouth applies a generic loading factor to an average per unit investment, which results in an erroneous result. In the case of a fiber feeder cable serving numerous digital loop carrier sites, a small fiber sheath such as a 24 fiber cable may carry thousands of digital loop carrier derived loops. Engineering that cable is not hundreds or thousands of times the engineering cost of a 50 pair copper cable. The engineer does relatively the same work to engineer either the 50 pair cable or the 24 fiber cable. Dickerson, Tr. 3134. Loading engineering costs equally on a per pair basis (or on a per pair equivalent as in the case of fiber) is incorrect.

b. Placement

Cost characteristics for installation or placement do not follow a linear relationship to the number of pair placed. Yet, BellSouth invokes such linear relationship.

i. Cable

Cable placement is affected by the same factors that affect engineering. As a result, the construction work requirements do not vary directly with the number of pairs or fibers (splicing being an exception). However, BellSouth's In-plant factor applies a placement factor to the unit

cost. That logic causes installation costs to vary linearly with the number of pairs placed. Dickerson, Tr. 3135.

For buried and underground plant types, placement costs vary little among cable sizes. Buried cable construction techniques, such as trenching, back hoe trenching, cut and restore concrete, cut and restore sod, laying the cable in the trench, and filling the trench vary little if at all with the size of the cable placed in the trench. Digging a trench for an 800 pair cable does not require 32 times the effort to dig a trench for a 25 pair cable. Dickerson, Tr. 3136. Aerial placement varies somewhat from small to large cables because of the difference in weight and diameter of the larger cables. Dickerson, Tr. 3136.

BellSouth's application of an installation loading to a unit cost, i.e., a linear cost per pair relationship, is flawed and should be rejected.<sup>7</sup> As this Commission determined in its Order No. PSC-99-0067-PCO-EG, issued in Docket No. 990002-EG on January 7, 1999; "We find that BellSouth's use of linear loading factors produces inherently unreasonable results." Order, page 159.

c. Poles and Conduits

BellSouth's linear loading factors used in the BSCC are also inappropriate. First, pole cost does not vary in a linear relationship to the number of pairs in the aerial cables. It is partially impacted by cable weight and cable diameter, which are a function not only of pairs in the sheath, but of the gauge of the cable. Dickerson, Tr. 3136. Pole cost is also affected by clearance requirements, the slope of the ground, the wind conditions, the type of ground into which the poles are placed, and changes in direction, either side to side or up and down, of the

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<sup>7</sup> BellSouth may argue that the use of In-Plant factors is justified because BellSouth does not have the necessary data readily available and, in any event, since the cost study assumes that the bulk of BellSouth's cable placements are for 25 pair cables, the effect is diminimus. Caldwell, Tr. 1234-36. These arguments are without merit. First, BellSouth, as Sprint has done, can and should gather its actual construction costs. Second, BellSouth cannot, in fact, serve all of its network needs by placing 25 pair cables. There are just too many "real-world" situations where BellSouth must use larger cables to meet demand and modernization situations.

pole line. Placing poles down a straight street is less costly than along a winding road. Dickerson, Tr. 3136.

In the underground plant, a single 4" PVC duct in place has the same cost regardless of whether it carries a 100 pair copper cable, a 2400 pair copper cable, a six strand fiber cable, or a 288 strand fiber cable. The number of pair equivalents contained in each of those four sheaths are drastically different. The larger the capacity of the sheath that rides the structure, the lower the actual cost per pair or equivalent pair for the structure supporting the sheath. Dickerson, Tr. 3137. As shown in Mr. Dickerson's Refiled Rebuttal Testimony, duct cost per loop varies from less than a 3/10<sup>th</sup> of a penny to one dollar. Contrary to BellSouth's approach, costs are not and cannot be uniform per pair. Dickerson, Tr. 3137-38.

**Issue 8:** What are the appropriate assumptions and inputs for the following items to be used in the forward-looking non-recurring UNE cost studies?

- (a) network design;
- (b) OSS design;
- (c) labor rates;
- (d) required activities;
- (e) mix of manual versus electronic activities;
- (f) other.

**Position:** \*The forward-looking, non-recurring UNE cost studies should reflect as closely as possible the actual costs incurred in performing the required activity, including the amount of time required by an efficient provider to complete the activity and the cost to perform that activity, using most current loaded labor rates.\*

\* \* \* \*

Overall, the purpose of a non-recurring charges (NRC) study is to determine the cost of initiating, changing and providing unbundled network elements for CLEC customers. These NRCs should be based on the amount of time required to complete an activity and the cost of performing that activity.

An NRC study should consist of four main steps:

1. Identify the work activities or tasks performed to complete service order, installation, and other related service functions for each unbundled element.
2. Identify the work times related to performing each function above.
3. Identify the labor rates for each work group that completes the activity and multiplying that amount by the time identified to complete the activity.
4. Group the costs by appropriate activities to develop a cost by unbundled network element.

McMahon, Tr. 3155-56.

Sprint believes that NRCs should reflect the forward-looking costs an efficient firm would incur in providing Unbundled Network Elements (UNEs). However, the NRCs proposed by BellSouth do not meet this test and are indeed excessive.<sup>8</sup>

Despite the fact that incumbent LECs' networks and operating procedures include similar forward-looking, state-of-the-art technologies and processes that require similar work tasks and work times, BellSouth proposes NRCs which have significant price differences from what Sprint's cost analysis supports and what Sprint considers to be reasonable. McMahon, Tr. 3168. The main reasons why BellSouth's NRCs are so much higher than required is due to inflated time estimates involving the major components that make up NRCs, namely: 1.) Loop Qualification, 2.) Service Order, 3.) Loop Conditioning or "Loop Modification," and 4.) Loop Installation.<sup>9</sup>

1. Loop Qualification

BellSouth's Loop Qualification NRC is unreasonable because BellSouth assumes excessive engineering research time. BellSouth claims that it takes 165 minutes to review the plant records. Sprint's ILEC operations perform this function in only 35 minutes. That is a 2 hour and 10 minute discrepancy between the two companies. McMahon, Tr. 3169. While BellSouth's documentation was not clear whether or not its records are mechanized, the time estimate of 135 minutes to develop a loop make-up tends to suggest that BellSouth is still using

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<sup>8</sup> BellSouth also proposes disconnect charges for xDSL-capable UNE loops which are unreasonable. In reality, ILECs leave such loops in place as "cut-throughs" and/or "DCOPs" (Dedicated Central Office Plant) in order to avoid the unnecessary costs associated with dispatching a technician to disconnect and reconnect when a new customer orders service for the same location. For most services, including POTs and xDSL-capable loops, the same cable pair(s) can be reused. McMahon, Tr. 3183. BellSouth should not be allowed to charge for disconnects, as such, for copper pair-based xDSL services.

<sup>9</sup> BellSouth's work-time assumptions are based upon estimates made by subject matter experts (SMEs) without the benefit of time and motion studies or anything resembling real-time observations of the work force. In some cases, the persons doing the cost study made the time estimate and simply submitted them to the SME for validation, which, in some cases, amounted to the SME simply stating that the estimate "looks okay." Ex. 97, pp. 29, 44-45.

paper records. Sprint-Florida, on the other hand, utilizes an electronic database to research Outside Plant records. It should be noted that Sprint-Florida's 35 minutes for OSP engineering also includes researching electrical parameter and disturber information, while BellSouth's 135 minutes do not. McMahon, Tr. 3169-70.

2. Service Order

BellSouth's service order costs include 2.5 hours for Service Inquiry" work functions. McMahon, Tr. 3181. The descriptions provided include various work group activities such as "screens documents" and "reviews request" and "processes order." Each of these steps suggests manual intervention on each service order. These do not reflect the operations of an efficient service provider. An efficient provider will have an automated system that results in less manual intervention and less manual labor hours involved with the service order process. While there will always be some system fallout, an automated system should minimize that situation. Ex. 106, p. 17. Because BellSouth's service order system requires more manual intervention and handling, it is a more costly operation. Under BellSouth's cost analysis and assumption, these unnecessary costs are passed onto the CLECs in the form of excessive NRCs. Ex. 106, pp. 14-16.

3. Loop Conditioning

Sprint's discussion as to why BellSouth's loop conditioning NRCs are excessive is found at Sprint's position on and its analysis of Issue 11, below.

4. Installation

BellSouth's proposed installation charges for 2-wire xDSL-capable UNE loops are based upon inefficient methods and procedures and unreasonable work time estimates. This is because the BellSouth NRCs again assume manual processes and unreasonable work times. BellSouth claims it takes about 7 total labor hours to install a standard 2-wire xDSL-capable loop. The

only BellSouth work time component that appears reasonable is technician travel for which BellSouth allocates 20 minutes. The remaining 6.5 hours of labor is due to BellSouth's assumption of manual work activities and inflated work times. McMahon, Tr. 3181.

BellSouth's costs also include 3.8755 hours for the actual installation of an xDSL-capable loop. McMahon, Tr. 3182. Sprint's position is that such loops do not need to be "designed" circuits as claimed by BellSouth. BellSouth relies on this unfounded categorization in an attempt to justify the excessive labor times associated with manual order coordination and dispatching of technicians.<sup>10</sup> McMahon, Tr. 3182.

The remaining reasons BellSouth's installation charges are excessive are due to questionable work times allocated by BellSouth for certain other work functions. For instance, BellSouth allocates 0.2833 hours (17 minutes) to "wire circuit at collocation site." Sprint-Florida allocates a more reasonable 9 minutes to place and test this jumper on the MDF. All that is involved is a technician running a jumper wire from the OSP cable pair terminal block to the collocater's terminal block on the MDF. The costs associated with additional engineering and jumpers for "test point access" are unnecessary. Additionally, the BellSouth cost model allocates a total of 1.921 hours for an I&M field technician to hook up a single 2-wire xDSL-capable loop. This is about double the time that it takes in reality. McMahon, Tr. 3182-83.

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<sup>10</sup> Other work activities comprising BellSouth's 3.8755 hours for "Connect & Turn-up Testing" include the following: "assigns workforces; ensures dispatch; performs manual order coordination; resolves trouble." Time spent on trouble resolution activities should not be included. These maintenance costs are captured in the annual charge factors and are reflected in the monthly loop rates. McMahon, Tr. 3182.

**Issue 9: (a) What are the appropriate recurring rates (averaged or deaveraged as the case may be) and non-recurring charges for each of the following UNEs?**

- (1) 2-wire voice grade loop;
- (2) 4-wire analog loop;
- (3) 2-wire ISDN/IDSL loop;
- (4) 2-wire xDSL-capable loop;
- (5) 4-wire xDSL-capable loop;
- (6) 4-wire 56 kbps loop;
- (7) 4-wire 64 kbps loop;
- (8) DS-1 loop;
- (9) high capacity loops (DS3 and above);
- (10) dark fiber loop;
- (11) subloop elements (to the extent required by the Commission in Issue 4);
- (12) network interface devices;
- (13) circuit switching (where required);
- (14) packet switching (where required);
- (15) shared interoffice transmission;
- (16) dedicated interoffice transmission;
- (17) dark fiber interoffice facilities;
- (18) signaling networks and call-related databases;
- (19) OS/DA (where required).

**Position:**

Although Sprint, in actuality, has a position (although unstated) on BellSouth's recurring rates and non-recurring charges for a number of the UNEs listed in Issue 9(a), Sprint will focus only on "high capacity loops."

\*(9) "high capacity loops (DS3 and above)." The rates proposed by BellSouth are higher than necessary because BellSouth has used terminal size probability of occurrence percentages which are inconsistent with real world experience and expectations.\*

\* \* \* \*

BellSouth has provided minimal discussion of its cost methodology for high capacity loops. While, in general, the cost studies appear to be properly conducted, Sprint has concerns with the weighting factors (Probability of Occurrence) used to determine the frequency of



occurrence of each Synchronous Optical Network (SONET) Terminal type and the costs associated with various high capacity loop bandwidths. Sprint's concern is with BellSouth's development of costs for DS3 level high capacity loops. Specifically, BellSouth uses a weighting factor, which appears to be generic, rather than state-specific. The end result is recurring rates that are higher than necessary.<sup>11</sup> Dickerson, Tr. 3139-40.

BellSouth's study utilizes a relational database which includes the cost of individual transmission terminal and fiber cable components based on the capacity for each cost component, and varying utilizations based on the different possible terminal and bandwidth configurations. For example, the OC3 Circuit Pack has a specific proprietary material cost which appears in the database in twelve different variations of bandwidth, from DS0 to OC3, and utilizations ranging from approximately 25% to 100%. Dickerson, Tr. 3141. No explanation is provided for the equipment utilization levels within the study documentation.

As noted earlier, while Sprint understands the calculations, its concern is with the "probability of occurrence factor" that BellSouth uses to determine a per DS3 cost by weighting the cost of each terminal type. No source material was provided for the origins of these probabilities. Because BellSouth's study references only "Network," it is difficult to analyze these weighting factors.

The percentage of occurrence of each terminal type is important, because unit costs will decrease in direct proportion to the size of terminal used and the number of circuits provided. Interestingly, however, the probabilities used in this Florida proceeding are identical to those used by BellSouth in a similar proceeding in North Carolina, and possibly other state

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<sup>11</sup> Sprint finds that BellSouth's High Capacity DS3 Loops NRC is similarly inflated. For example, BellSouth allocates 19.35 hours to install a DS3 Facility Termination including 4.25 hours for service inquiry; 3.88 hours of engineering; and 11.22 hours connect and test. In reality, this entire effort takes closer to a total of 2 labor hours, with one hour for engineering and another hour for the actual DS3 card installation and testing. McMahon, Tr. 3185.

proceedings. Dickerson, Tr. 3143. Sprint finds it difficult to believe that the probability of occurrence for a particular terminal size is the same for BellSouth's territory in all exchanges and all states.

As an alternative to BellSouth's probability of occurrence factor, Sprint recommends that, whenever possible, state-specific data should be used. Since Sprint was able to develop Florida-specific weighting based on the three terminal sizes and actual customer location data, BellSouth should be able to do the same. Following are Sprint's Florida-specific probabilities of occurrence for each terminal type:

<u>Terminal Type</u>	<u>Sprint's Probability of Occurrence</u>
OC3	64.58%
OC12	22.92%
OC48	12.50%

Dickerson, Tr. 3144.

The OC48 terminal types for Sprint's Florida exchanges occurred in the Fort Meyers, Tallahassee, and the Winter Park (Orlando) areas. These are the most urban areas Sprint serves in Florida, and they have a corresponding concentrated demand for DS3 circuits resulting in the use of the larger OC48 terminal size. BellSouth has a much greater occurrence of Urban Wire Centers in Florida than Sprint. Dickerson, Tr. 3144. Consequently, BellSouth's probability of occurrence of DS3 circuits on OC48 systems should be much higher than Sprint's. However, BellSouth's cost study uses a smaller percentage of OC48 systems. Dickerson, Tr. 3144.

By simply using Sprint's probability percentages, and BellSouth's actual costs and spreadsheet calculations, BellSouth's recurring cost for DC3 facility terminations dropped from \$407.58 to \$378.63. Dickerson, Tr. 3145. The reason this occurs is because the highest per unit DS3 costs are for OC3 terminals. By using BellSouth's Florida-specific frequency of occurrence

percentages, which, unfortunately BellSouth has not provided, the resulting costs should be even lower than the illustration above which uses Sprint's Florida-specific terminal weightings. BellSouth should be required to recompute its DS3 costs based on its Florida-specific terminal weighting that will fairly and accurately reflect the economics of its dense urban markets.

**Issue 9(b):** Subject to the standards of the FCC's Third Report and Order, should the Commission require ILECs to unbundle any other elements or combinations of elements? If so, what are they and how should they be priced?

**Position:** \*This proceeding does not address the pricing of two network elements the Federal Communications Commission determined should be unbundled; namely, "line sharing" and Operational Support Systems (OSS). Sprint understands these two network elements will be addressed in separate proceedings.\*

**Issue 10:**      **What is the appropriate rate, if any, for customized routing?**

**Position:**      No position.

**Issue 11: What is the appropriate rate, if any, for line conditioning, and in what situations should the rate apply?**

**Position:** \*The appropriate rate for line conditioning should reflect the forward-looking economic costs of an efficient provider using, to the greatest extent possible, all available mechanized and automated systems, including engineering records, technician dispatch and testing. BellSouth should not be allowed to rely upon unfounded assumptions which are in direct conflict with real-world line conditioning experience.\*

\* \* \* \*

Line conditioning (a.k.a. loop conditioning) is the process that may be used in conjunction with loop qualification for the provisioning of an xDSL-capable loop. This includes work in the outside plant necessary to provide a facility that will allow for transmission of high-speed digital service, such as DSL. This work may include the removal of multiple load coils,<sup>12</sup> repeaters<sup>13</sup> and/or bridged taps.<sup>14</sup>

Load Coils

Digital services, such as xDSL, will not work on a pair that has load coils. Load coils will block the transmission of digital services, including xDSL-based services for both copper fed and NGDLC provisioned, xDSL-capable loops. This is the reason that forward-looking

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<sup>12</sup> Load coils are placed at regular intervals on copper cable pairs that are 18,000 feet or longer. Their purpose is to improve the transmission quality for voice grade services on these longer pairs by reducing the signal loss caused by the capacitance of the telephone cable. Copper pairs that are less than 18,000 feet long do not have to be loaded in order to provide voice grade services. McMahon, Tr. 3158.

<sup>13</sup> A repeater is generally used to amplify a signal over a copper loop. Without such amplification, the signal will decay over distance. Actually, the type of repeaters that are found in cable plant are not used for voice grade circuits. They are specialized modifications to the voice network that are installed to support digital services such as T1 and ISDN. Nevertheless, the existence of a repeater will interfere with xDSL signals. McMahon, Tr. 3159-60.

<sup>14</sup> Bridged tap is any piece of the cable pair that is not in the direct path between the customer and the switching device. In the embedded network, there may be insufficient distribution pairs to permanently assign pairs to each address. A pair may be made accessible so that it could potentially be used at several different addresses if it were needed. This is called "multiple" plant. Bridged tap is an issue because it degrades the quality of any type of signal. This issue is magnified when xDSL is placed on a loop. McMahon, Tr. 3160-61.

networks are designed with loops that are short enough to avoid the need for load coils. McMahon, Tr. 3158.

Generally, the load coil is not actually removed, it is just disconnected from the cable pair. This involves snipping off the four wires that connect the coil to the cable pair and then reconnecting the two ends of the cable pair. McMahon, Tr. 3159. As was demonstrated by Data ALECs' witness, Mr. Joseph P. Riolo, in large cables, this may involve removing a connector that splices 25 pairs at a time, pulling out the load coil wires and replacing the connector. See Ex. 147.

Sprint's position is that, under the Act – and even pursuant to generally accepted engineering practices - an efficient, forward-looking network is required. In an efficient, forward-looking network, load coils would not be installed on loops under 18,000 feet. Accordingly, an ILEC should not be compensated for removal of load coils that shouldn't have been there in the first place. However, Sprint recognizes the FCC rules permit recovery of the non-recurring costs of load coil removal. In that context, Sprint is insisting that the cost and rate for removal of load coils be based on an efficient mechanism. Ex. 107, p. 8.

An efficient ILEC will unload multiple pairs at one time when working on loops under 18,000 feet in length, instead of unloading only the pair required for the current order. The actual work time involved in disconnecting the load coils is no more than a minute or two, but set-up time can be significant, particularly when working in manholes. McMahon, Tr. 3159. As BellSouth's video demonstrates, time spent disconnecting the load coils is insignificant in comparison to getting the cable ready to do the actual unloading. Ex. 117. Yet, little weight should be given to the times involved in the BellSouth video because the situation shown is highly rare. McPeak, Tr. 3001-03. It should be noted, however, that in the BellSouth video, 25

pairs were unloaded in a 2700 pair cable in which every pair was loaded. Ex. 117. See the discussion of Loop Conditioning Costs, below.

### Bridged Tap

Because bridged taps interfere with digital service, conditioning requires their removal. However, no plant is actually removed. The two wires of the cable pair are simply cut off and capped. In splices in larger cables, this may require removing a connector that splices 25 pairs at a time, pulling out the bridged pair and replacing the connector. McMahon, Tr. 3161-62. Sprint's position is that excessive bridged tap can be removed the majority of the time at the customer's serving terminal (where the customer's drop wire connects to the distribution cable). McMahon, Tr. 3162.

### Loop Conditioning Costs

Loop conditioning costs should be based upon current, actual costs incurred by an efficient provider. For load coil removal on loops over 18,000 feet, and all bridged tap and repeater removals, the costs should be determined on a per location basis, dependent upon the type of outside plant (Underground, Aerial or Buried) facilities and the work performed. McMahon, Tr. 3162.

As noted previously, it is more time consuming to perform loop conditioning activities in underground manholes than it is to perform the same procedures within aerial or buried outside plant (OSP) facilities. Unlike the aerial and buried OSP environments, a single technician cannot perform (loop conditioning) work activities in the underground as a minimum of two laborers are required for safety reasons.<sup>15</sup> McMahon, Tr. 3162-63.

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<sup>15</sup> As shown in the BellSouth video, the time required for pumping out water and purging potentially dangerous gases is required when working in the underground, but not in aerial and buried OSP facilities. Since manholes are many times located and accessed within city streets, there are additional costs associated with setting up traffic control as opposed to the aerial and buried environments where utility trucks can usually pull off and away from the roadways. McMahon, Tr. 3163.



An efficient service provider's NRC cost model would assume that in both aerial and buried plant facilities, the majority of cable pair access locations would involve quick and easy access to the cable pairs via "ready access" splice enclosures. The utilization of such enclosures is common industry practice – even in buried plant environments as these cable pair access locations are normally brought above ground into a pedestal. McMahon, Tr. 3163.

Perhaps most importantly, NRCs for load coil removal on loops under 18,000 feet in length requires a different cost study approach. Because cable pairs are generally loaded in groups of 25, and are not needed at all on loops less than 18,000 feet in length, separate costs should be determined based upon a more efficient load coil removal process. McMahon, Tr. 3164. Sprint considers it to be reasonable to spread the fixed costs of accessing the cable pairs across all the pairs that would be unloaded in a 25 pair binder group. The incremental labor costs associated with unloading 24 more cable pairs should be added to a single engineering and travel charge and then divided by 25 to determine the cost per pair for the entire binder group. McMahon, Tr. 3164.

BellSouth, which covers more urban areas, with greater customer densities and larger cable sizes, should employ a cost model that assumes even greater efficiencies, such as performing load coil removal in greater quantities such as 50 or 100 pairs at a time. McMahon, Tr. 3164-65. Unfortunately, as will be demonstrated, BellSouth has chosen a different approach; one which ignores efficiency and imposes unnecessary NRCs on the new entrants.

#### BellSouth's Assumptions

- Load Coils

As noted earlier, BellSouth's proposed loop conditioning NRCs are not based upon and do not reflect the actual costs which an efficient provider would incur in providing the required loop conditioning activity. BellSouth assumes that only 10 loops at a time will have load coils

removed instead of the 25, 50 or 100 pairs which an efficient provider would remove at one time.<sup>16</sup>

Not only is BellSouth's estimate that 10 loops at a time will be unloaded unrealistic, BellSouth's load coil removal work time estimates are overstated and unsupported.<sup>17</sup> Unlike BellSouth, which claims it utilizes its own work forces to remove load coils, Sprint is paying contractors at a much lesser cost to perform load coil removal in the State of Florida. The BellSouth cost model allots 1.5 hours for the same work in all three OSP environments. BellSouth's average "cable splicer" labor rate is \$44.06 per hour. Sprint, on the other hand, pays contractors an average of \$3.06 per cable pair for this activity in underground plant and an average of \$1.61 per cable pair when in aerial or buried plant. Ex. 75, pp. 18-21. While BellSouth's cost model allocates something closer to \$6.61 per cable pair ( $44.06 \times 1.5 \text{ hours} / 10$ ) to deload a cable pair, Sprint pays contractors an average of \$1.61 to deload a cable pair in aerial and buried plant. McMahon, Tr. 3174. These contracts are negotiated with a variety of contractors at arms length. It is rightfully assumed that each contractor is interested in making as much profit as it can from providing these services.

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<sup>16</sup> The 10 loops at a time that the BellSouth cost model assumes are not an appropriate number allocated to ALECs. BellSouth makes adjustments that allocate costs for 6 of every 10 loops conditioned to ALECs. BellSouth's Unbundled Loop Modification Recovery Cost Study input file states, "Of the 10 lines being conditioned on a field visit; 2 will be recovered through (other) UNE applications, 4 from BST; and 4 leftover." The "4 leftover" are used in the xDSL loop calculations and two others will be charged to ALECs when they order the other two UNEs that require conditioning. The BellSouth study assumes that ALECs will be experiencing total penetration of 60% in BellSouth territory within the near future. McMahon, Tr. 3172. This level of assumed ALEC market penetration is questionable at best. A more proper methodology would be to determine the loop conditioning costs on a unit (cable pair) basis. Then, whoever uses the "modified" cable pair would bear the cost of conditioning. This approach works fairly across all market share penetrations ranging from 0% to 100%. McMahon, Tr. 3173.

<sup>17</sup> James F. Ennis, one of BellSouth's SMEs, acknowledges that BellSouth has performed no time and motion studies to support its work time estimates, even though he recommended to his supervisors that such studies be performed. Ex. 97, pp. 44-45.

## Bridged Taps

Another example of overstated time estimates involves bridged tap removal. Again, ignoring, for the moment, the cost differences that involve set-up time and opening and closing the splice enclosure, and focusing on the specific work function of removing bridged tap, BellSouth allots 45 minutes for its technicians to remove bridged tap (snip two wires). This equates to roughly \$4.50 per pair as the BellSouth model assumes 10 are removed at the same time. For this same work function, Sprit pays contractors an average of 45 cents per pair in underground plant and 39 cents per pair in aerial and buried plant. McMahan, Tr. 3175-76.

BellSouth has assumed that 3 bridged taps would always need to be removed and assumed that 33% of bridged tap would need to be removed in manholes. However, most bridged taps occur in distribution plant where there is primarily aerial and buried cable and very little underground cable. Cable pairs are very rarely bridged in the feeder plant where most underground cable occurs, precisely to avoid the high cost of re-entering those manhole splices. McMahan, Tr. 3176-77.

The fact is that virtually all bridged tap removal could be done in aerial or buried cable, at far less cost. In the few instances in which cable pairs are bridged in a manhole splice, it is very likely that the pair could be trimmed at the point at which it leaves the conduit system and becomes aerial or buried for distribution. This would be far less costly than opening a splice in a manhole. McMahan, Tr. 3177.

Furthermore, cutting off the pair at the serving terminal at the same time that the xDSL service is installed would bring many loops into compliance at very little incremental cost. Cutting off the pair at the serving terminal is a common practice. That is, the technician could remove the bridged tap while doing the connection of the xDSL loop to the customer's drop. This would eliminate a separate trip, separate set-up time and separate tear-down time. The only

additional time would be the few minutes that it would take to cut the wires or remove them from the connector. McMahon, Tr. 3177-78.

#### Plant Mix

Another reason why BellSouth's "loop modification" NRC is so unreasonable is because BellSouth's costs are not based upon realistic underground, buried and aerial plant mix factors. BellSouth assumes that 90 percent of its loop modification will occur in underground plant. As noted earlier, underground is the most costly environment. Sprint researched its Outside Plant records in the State of Florida to determine the frequency that work would need to be performed in each of these environments at the first two load points. Sprint found that the first load point is within underground plant 59.2% of the time. The second load point was found to be in underground plant 51.6% of the time. Ex. 75, pp. 31-37; McMahon, Tr. 3178. These percentages do not support BellSouth's 90% underground assumption utilized in the BellSouth cost model.

Additionally, BellSouth provides no explanation as to why their cost model assumes that 2.1 load point locations would exist. It would be inconsistent with standard OSP engineering rules for customer end sections to be located within 3,000 feet from a load point. Therefore, the third load point, normally at around 15kf, should not be considered or included in any loop conditioning costing equations for loops that are shorter than 18kf in length. McMahon, Tr. 3180.

Finally, BellSouth's "loop modification" non-recurring charge is unreasonable because BellSouth assumes that 42.79% of xDSL loops would require "modification." This assumption is not supported by the results of Sprint's Outside Plant records research. Sprint found that only 3.2% of Sprint-Florida's loops less than 18,000 feet in length would require the removal of load coils. McMahon, Tr. 3180. Again, Sprint-Florida's loop conditioning plant mix is based upon

actual information per Outside Plant records researched in the State of Florida. One would expect that BellSouth would have even fewer loaded loops than Sprint-Florida. Loaded loops are more prevalent in rural territories due to the economics associated with implementing forward-looking fiber-fed DLC network infrastructures in less densely populated areas.

**Issue 12:** Without deciding the situations in which such combinations are required, what are the appropriate recurring and non-recurring rates for the following UNE combinations:

- (a) “UNE platform” consisting of: loop (all), local (including packet, where required) switching (with signaling), and dedicated and shared transport (through and including local termination);

**Position:** No position.

- (b) “extended links,” consisting of:

- (1) loop, DSO/1 multiplexing, DS1 interoffice transport;
- (2) DS1 loop, DS1 interoffice transport;
- (3) DS1 loop, DS1/3 multiplexing, DS3 interoffice transport.

**Position:** No position.

**Issue 13      When should the recurring and non-recurring rates and charges take effect**

**Position:** \*Sprint recommends that any UNE rates ordered in this proceeding should be filed 60 days after the release of the Commission Order.\*

\* \* \* \*

Sprint recommends that BellSouth be required to file UNE rates that conform to the Commission's Order in this proceeding 60 days after the release of that Order. Those rates would become effective on the date they are filed. Sichter, Tr. 3107.

#### IV. CONCLUSION

As this Post-Hearing Brief and the underlying record in this proceeding amply demonstrate, the UNE recurring prices and NRCs proposed by BellSouth do not meet the requirements of the Act or the FCC's Orders and Rules implementing the Act. This is because BellSouth's cost study in many instances relies upon unfounded assumptions rather than real-world factual data. These unfounded assumptions result in inflated costs which drive excessively high prices and charges.

In particular, BellSouth's proposed prices for local loops – xDSL-capable and high capacity loops – and interoffice transport are based upon network assumptions and factors which are neither forward-looking nor least-cost. Additionally, loop conditioning prices are similarly based upon network assumptions and factors that are neither forward-looking nor least cost.

Further exacerbating the effect of BellSouth's excessively high unbundled loop prices is BellSouth's attempt to deaverage unbundled loop prices by banding wire center cost results by retail rate groups rather than by similar cost characteristics. BellSouth's proposed deaveraging technique is inconsistent with the Act and the FCC Orders and Rules requiring deaveraging based upon "cost-related" methods.

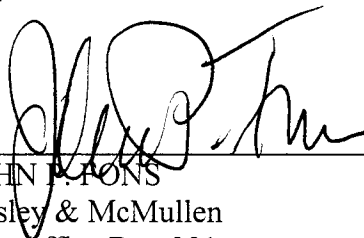
Consequently, the Commission should reject BellSouth's pricing proposal and loop deaveraging results, and BellSouth should be required to refile its prices based upon a cost study using Commission-directed network assumptions and factors which are forward-looking and least-cost and reflect real-world experience and data. Additionally, BellSouth should be required to deaverage local loops and related combinations in a cost-based manner. Only then will BellSouth's prices comply with the requirements of the Act, and only then will the new entrants have a real opportunity to compete in the local exchange marketplace as contemplated by the Act.



Respectfully submitted this 21<sup>st</sup> day of November, 2000.

CHARLES J. REHWINKEL  
Sprint-Florida, Inc.  
P. O. Box 2214  
Tallahassee, Florida 32316  
(850) 847-0244

and

A handwritten signature in black ink, appearing to read "John P. Forns", is written over a horizontal line.

JOHN P. FONS  
Ausley & McMullen  
Post Office Box 391  
Tallahassee, Florida 32302  
(850) 224-9115

ATTORNEYS FOR SPRINT

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true copy of the foregoing has been furnished by e-mail transmission, U. S. Mail, or hand delivery (\*) this 21<sup>st</sup> day of November, 2000, to the following:

Beth Keating \*  
Division of Legal Services  
Florida Public Service Comm.  
2540 Shumard Oak Blvd.  
Tallahassee, FL 32399-0850

Nancy B. White  
Bennett L. Ross  
BellSouth Telecommunications  
150 S. Monroe St., Suite 400  
Tallahassee, FL 32301-1556

Karen F. Jusevitch  
AT&T  
101 N. Monroe Street, Suite 700  
Tallahassee, FL 32301-1549

Steve Bowen/Jeremy Marcus  
Blumenfeld & Cohen  
1625 Massachusetts Ave., NW  
Suite 300  
Washington, DC 20036

BlueStar Networks, Inc.  
Five Corporate Centre  
801 Crescent Centre Drive  
Suite 600  
Franklin, TN 37067

Jim Lamoureaux  
AT&T Communications  
1200 Peachtree Street, N.E.  
Room 8068  
Atlanta, GA 30309

Michael A. Gross  
Florida Cable Telecommunications  
Assoc., Inc.  
246 East 6<sup>th</sup> Avenue  
Tallahassee, FL 32303

Joseph McGlothlin  
McWhirter, Reeves, et al.  
117 South Gadsden Street  
Tallahassee, FL 32301

Charles Pellegrini  
Wiggins and Villacorta  
2145 Delta Blvd., Suite 200  
Tallahassee, FL 32303

Catherine F. Boone  
COVAD  
10 Glenlake Parkway  
Suite 650  
Atlanta, GA 30328

Kimberly Caswell  
GTE Florida Incorporated  
P. O. Box 110, FLTC0007  
Tampa, FL 33601-0110

Norman H. Horton, Jr.  
Messer, Caparello & Self  
215 S. Monroe St., Suite 701  
Tallahassee, FL 32301

Richard Melson  
Hopping Law Firm  
P. O. Box 6526  
Tallahassee, FL 32314

Scott Sappersteinn  
Intermedia Communications, Inc.  
3625 Queen Palm Drive  
Tampa, FL 33619-1309