



Public Service Commission

-M-E-M-O-R-A-N-D-U-M-

DATE: April 13, 2001
TO: William Talbott, Executive Director
FROM: Anne E. Marsh, ^{aw} Economic Analyst
Division of Competitive Services *AMS*
RE: Errata to April 6, 2000 Staff Recommendation
Docket No. 990649-TP - Investigation into Pricing of
Unbundled Network Elements

Attached is an errata to the April 6, 2000 staff recommendation. Due to the size of the document, it is not feasible to file a complete revised recommendation. The majority of the changes are grammatical, typographical, and spelling in nature. For those pages that have changes that are meaningful, we have attached revised pages. For the remaining corrections, we are filing this errata in place of revised pages.

The issues involved are of a sensitive nature. Additionally, the matter is scheduled for a special agenda, which poses difficulty for rescheduling. Staff believes the changes are easily understood. Accordingly, we request that this item not be deferred.

If you have any questions regarding the errata, please call me at 413-6554.

Attachment

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Public Service Commission

-M-E-M-O-R-A-N-D-U-M-

DATE: April 13, 2001
TO: Blanca Bayó, Director, Division of Records and Reporting
FROM: Anne E. Marsh, ^{GM}Economic Analyst
Division of Competitive Services *ams*
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Attachment

cc: William Talbott, Executive Director
Mary Bane, Deputy Executive Director, Technical
Melinda Butler, Aide to Chairman Jacobs
William Berg, Aide to Commissioner Deason
Joann Chase, Aide to Commissioner Jaber

4/13/01

OK
WJ

ERRATA TO APRIL 6, 2001 STAFF RECOMMENDATION				
ISSUE	PAGE	LINE	WAS	SHOULD BE
Cover Page	1	File Name	S:\PSC\CMU\WP\990649.RCM	S:\PSC\CMP\WP\990649.RCM
Issue A	29	17-18	BellSouth briefed the issue but did not provide a summary of its position.	The United States Court of Appeals for the Eighth Circuit vacated FCC Rule 51.505(b)(1), which imposed the "hypothetical" network assumption in developing rates for unbundled network elements and interconnection. The decision does not affect the requirement that rates for unbundled networks must be established based upon a forward-looking cost methodology. BellSouth asserts that the Court left undisturbed that part of FCC Rule 51.505(b) immediately preceding Rule 51.505(b)(1), that sets forth the long-run component of the FCC's pricing methodology. BellSouth also asserts that pursuant to FCC Rule 51.505(c), a "reasonable allocation of forward looking common cost" be included in unbundled network prices, and that the requirement to include shared and common costs is also embodied in FCC Rules 51.503(b) and 51.505(a).

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Issue B	31	16-17	BellSouth briefed the issue but did not provide a summary of its position.	The Commission has the authority and is statutorily required to establish "just and reasonable" rates for unbundled network elements and interconnection services, pursuant to 47 U.S.C. § 252 (d). Furthermore, as a result of the Eighth Circuit's stay, all of the FCC's pricing rules, including Rule 51.505(b)(1), remain in effect and are binding upon this Commission.
Issue B	32	27	relation	relating
Issue 1	39	30	rices	prices
Issue 2 (a)	44	23	appropriate	inappropriate
Issue 2 (a)	45	29	sound	send
Issue 2 (a)	45	40	7 a & 6	7 & 6
Issue 2 (a)	47	14	"significant" deviation	"significant" deviation cannot be done with absolute precision
Issue 2 (a)	47	32	investment decisions.	investment decisions."
Issue 2 (a)	47	34	as this	as this is
Issue 2 (a)	47	7	transport and included	transport are included
Issue 2 (a)	49	37	loop cost	loop costs
Issue 2 (b)	54	8	below DS3,	below DS3, sub-loops, and

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Issue 2(b)	55	29	of loops, and	of loops, sub-loops, and
Issue 3(a)	61	6	services are distant-sensitive.	services are distant-sensitive [sic].
Issue 3(a)	63	5	my	may
Issue 3(a)	66	4	whether is	whether it
Issue 3(a)	82	6	Sentence beginning "Further, witness Murray . . . "	Strike
Issue 3(a)	84	12	definition of an DSL	definition of a DSL
Issue 3(a)	84	13	assume that	assumed that
Issue 3(a)	85	38	since.	sense.
Issue 3(a)	86	11	such as line cards, vendors, cost etc.	such as line cards, vendors, and their associated prices.
Issue 3(a)	86	29	attempting to offering.	attempting to offer.
Issue 4(a)	92	3	elements be	elements should be
Issue 4(b)	103	13	on the following page	below
Issue 4(b)	104	35	elements	element
Issue 7(a)	158	2	cads	cards
Issue 7(a)	159	14	were unable	they were unable
Issue 7(a)	160	6	the maximum the	the maximum
Issue 7(a)	166	37	advances	advanced

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Issue 7(a)	167	37	have been impeded. They subsequently	have been impeded.
Issue 7(a)	168	1	sufficient time. . . impeded.	[strike]
Issue 7(a)	169	19	for determining	for determining the
Issue 7(a)	170	5	is a cost minimization	is cost minimization
Issue 7(a)	170	34	DSOs the level	DSOs and the level
Issue 7(a)	171	2	An	And
Issue 7(b)	182	5	metallic cables	metallic and fiber cables
Issue 7(b)	182	26-28	Witness Cunningham explained that BellSouth used a regression analysis to develop these inputs. Historical and planning data were used in a regression analysis to arrive at these inputs.	Witness Cunningham explains that BellSouth uses a regression analysis to develop these inputs based on historical and planning data.
Issue 7(b)	183	16	unit	units
Issue 7(b)	184	28	BellSouth is its	BellSouth in its
Issue 7(b)	184	33	totally on history Table 7(b)-3	totally on history, Table 7(b)-3
Issue 7(b)	186	22	13-year life and an 8-year life, respectively.	13-year life for digital switching, an 8-year life for circuit DDS, and a 9-year life for digital circuit equipment.

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Issue 7(b)	186	31	Add a sentence	Additionally, staff recommends a 6.8-year life for analog circuit equipment.
Issue 7(c)	198	last	add cite	(EXH 3, p. 5)
Issue 7(g)	221	28	9 point	9 percentage point
Issue 7(i)	224		Beginning with Staff Analysis through end of page	Strike
Issue 7(i)	225		Beginning of page up to Staff Analysis	Strike
Issue 7(k)	251	26	Docket No. 98696-TP	Docket No. 980696-TP
Issue 7(n)	265	5	price	prices
Issue 7(n)	267	5	price	prices
Issue 7(o)	275	34	adjusted for the a	adjusted for a
Issue 7(o)	283	8	shared by CLASS modem	shared by a CLASS modem
Issue 7(o)	288	37	pro rate	pro rata
Issue 7(s)	311	11	believes there's a good	believes there is a good
Issue 7(s)	311	16	doesn't have the requisite	does not have the requisite
Issue 7(s)	311	21	hasn't assembled it	has not assembled it
Issue 7(s)	313	32	putting cable in	putting the cable in
Issue 7(s)	314	32	location visit, to determine	location visit to determine

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Issue 8(a)	376	7	study should emphasize	study should not emphasize
Issue 8(a)	376	29	if such system	if such a system
Issue 8(a)	376	35	she testified that network	she testified that the network
Issue 8(d)	466	2	[Summary] Table 8d-13	Table 8d-14
Issue 8(d)	467	1	Table 8d-1	
Issue 9(a)	478	25	Add staff	Fogleman
Issue 11	515	16	I have	he has
Issue 11	550	24	we	it
Issue 11	572	8	[under conclusion] not believe	strike
Issue 12	622	19	COMBINATIONS	combinations
Issue 12	626	9	COMBINATIONS	combinations
Issue 12	626	23	COMBINATIONS	Combinations
Issue 12	627	1	COMBINATIONS	Combinations
Rate Element P.6.1	673		2-wire VG Extended Loop with Dedicated DS1 Interoffice Transport - New [Nonrecurring Including First] \$541.99	\$352.78
Rate Element P.6.1	673		2-wire VG Extended Loop with Dedicated DS1 Interoffice Transport - New [Nonrecurring Additional (If different)] \$383.46	\$271.90

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ISSUE	PAGE	LINE	WAS	SHOULD BE
Rate Element P.13.1	677		4-wire DS1 Digital Extd. Loop with Ded. DS3 Interoffice Transport - New [Nonrecurring Including First] \$388.66	\$526.35

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plans described in § 69.123 of this chapter, or other such cost-related zone plans established pursuant to state law.

(2) In states not using such existing plans, state commissions must create a minimum of three cost-related rate zones. (§51.507(f))

Issue 2(a) concerns what approach should be used to arrive at deaveraged UNE rate zones, and the specific design of the zones (e.g., the number of rate zones). Issue 2(b) addresses the UNEs for which it is appropriate to determine deaveraged UNE rates.

BellSouth witness Varner observes that historically, regulators established retail rates for basic service in an inverse relationship to costs, by setting the highest rates in those areas which were the lowest cost to serve. In contrast, deaveraged rates for UNEs will need to be cost-based. (TR 44) Accordingly, he contends that there will be a mismatch between the rate structure for deaveraged UNEs and that of retail basic local exchange service. (TR 45) To remedy these problems, witness Varner recommends that this commission should encourage local rate rebalancing and the creation of an intrastate universal service fund. Unless these steps are taken, because of the abovementioned pricing anomaly deaveraging of UNE rates ". . . simply creates another opportunity for ALECs to engage in inappropriate arbitrage of the pricing schedule. This arbitrage will ultimately lead to higher prices for rural customers as ALECs usurp the contribution contained in the prices charged in urban areas that currently make lower rural prices possible." (TR 45-46)

In order to provide relative consistency between BellSouth's retail and UNE rate structures, witness Varner asserts that it is appropriate to map the company's existing retail rate groups onto three proposed UNE rate zones. (TR 47) He further explains why this proposal is reasonable:

Utilizing local exchange rate groups to deaverage UNEs provides consistency between the structure of BellSouth's retail, resale and UNE prices. Further, customers who are located in the same geographic areas and who have similar calling areas will be in the same deaveraged zone for UNE pricing. Simply using existing rate groups as the basis for establishing pricing zones results in

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"deaveraged UNE retail prices based on the existing rate group structure best correlates with the retail market environment in Florida, thereby promoting competition in all areas of Florida." (TR 1122) Moreover, since BellSouth's business local rate in rate group 12 is \$29.10, and BellSouth's proposed deaveraged UNE loop rate for that associated rate group is \$16.17, he opines that even after the costs of switching and transport and included, little insulation is provided for the company's retail rates. (TR 1122)

Sprint witness Sichter testifies that "As a general principle, rates should be deaveraged to the degree necessary to achieve a result wherein the averaged rate does not deviate significantly from the actual forward-looking cost of providing that element anywhere within the defined zone." (TR 3095) While acknowledging that quantifying what constitutes a "significant" deviation cannot be done with absolute precision, witness Sichter asserts that differences between rates and costs greater than 20% would be sufficient to distort providers' investment decisions. (TR 3095) Using this criterion, the witness proposes that ". . . , each incumbent LEC should be required to construct a deaveraged rate schedule such that the average rate in each zone is no more than 20% higher or 20% less than the forward-looking cost of providing that element." (TR 3095)

Witness Sichter offers four criteria that he believes should underlay this commission's requirements for ILEC deaveraging of UNES. First, prices for a UNE should be deaveraged where required in order to avoid distortions between the rate charged for the UNE and the forward-looking economic cost (FLEC) of the UNE in a given geographic area. Consequently, whether to deaverage a particular UNE can vary by element and between ILECs. (TR 3096) Second, ". . . the degree of rate deaveraging should be based on both administrative considerations and a realistic assessment of the extent to which limited rate averaging would not materially adversely impact competition and investment decisions. (TR 3097) Third, each incumbent LEC should be required to develop its FLEC at the wire center level, as this the most reasonable unit of analysis. (TR 3098) Fourth, wire centers should be grouped into zones and rates developed based on the weighted average cost of a UNE in a given zone. Although the witness asserts that his 20% criterion generally should be adhered to, he agrees that a greater deviation between cost and price may be appropriate in the highest cost zone. (TR 3099)

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ISSUE 2(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).

RECOMMENDATION: Staff recommends that the recurring costs of all varieties of loops below DS3, ~~sub-loops~~, and combinations containing such loops, should be deaveraged in this proceeding.
(Dowds)

POSITION OF THE PARTIES

BELLSOUTH: Recurring costs of loops and local channels below the DS3 level (including sub-loops and combinations involving these elements) should be deaveraged. These are the only elements that display a significant level of cost variation by geographic location and do not have price structures that already account for geographic cost differences.

DATA ALECS: Adopt FCCA position.

FCCA ALECS: The forward-looking rates for every loop type, including combinations that include loops, should be deaveraged.

SPRINT: 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.

TIME WARNER: Adopts FCCA ALECs' position.

STAFF ANALYSIS: BellSouth witness Varner testifies that the only UNEs that should be deaveraged are the recurring cost of the local loop and the local channel, because those are the only elements that display significant cost variations according to geographic location. He believes that it is unnecessary to deaverage unbundled switching prices because switching costs do not exhibit major cost variations by geography, and are not subject to the same factors that cause cost variability in loops. (TR 50) Moreover, to

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the extent that the costs of other UNEs do vary by geography, witness Varner notes that such variability is reflected in the rate structure. As an example, the witness points to interoffice transport, which is priced on a per mile basis. The primary cost driver of this element is the length of the transmission facility, which is captured in the rate structure. (TR 50-51)

Witness Varner observes that due to the reinstatement of FCC Rule 51.315(b), BellSouth is obligated to provide ALECs access to UNE combinations which are in fact combined in BellSouth's network to provide service to a specific customer. (TR 51-52) Since many combinations involve either a loop or a local channel, the witness recommends that deaveraged rates should be set for all UNE combinations that include a loop or local channel. (TR 52) BellSouth witness Caldwell expanded on and clarified the company's recommendation, stating the following elements should be deaveraged: all local loops and local channels below DS3 speeds; sub-loops; and combinations "currently combined" that have a loop as a component. She notes that it is unnecessary to deaverage loops and local channels above DS1 because their costs (and thus prices) are on a per mile basis. (TR 111)

With the exception of Sprint, all other parties appear to be in agreement that loops, and combinations containing loops, should be deaveraged. (FCCA ALECs BR at 10; Data ALECs BR at 18) Although Sprint throughout this proceeding advocated that various UNEs in addition to loops exhibit cost characteristics that vary based on geography, nevertheless in their brief Sprint now recommends that the commission only require that loops and related combinations be deaveraged.

Recommendation

Staff recommends that all varieties of ~~loops, sub-loops,~~ and combinations containing loops, should be deaveraged in this proceeding. All parties now are in agreement on this point, and staff perceives no compelling reason to differ from this consensus. Staff would observe that while BellSouth proposes to deaverage all loops below DS3, all other parties merely contend that "loops" be deaveraged. Since the rate structure for loops and local channels whose bandwidth is DS3 and above resembles that of interoffice transport in that it is priced on a mileage-sensitive basis, staff believes that it is sufficient to deaverage only loops below DS3.

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BST's proposed prices for ADSL compatible loops and UCL-Short loops are essentially the same. Witness Murray explains that through discovery, BST confirmed that "[t]he recurring costs are identical [for elements A.13.1 and A.6.1] and both cost elements are treated identically in the BSTLM[®] for development of recurring costs." (Murray TR 2493) ~~Further, witness Murray notes that BST's proposed prices for ADSL loops and UCL-Short loops are essentially the same and BST confirmed that "[t]he recurring costs are identical [for elements A.13.1 and A.6.1] and both cost elements are treated identically in the BSTLM[®] for development of recurring costs." (TR 2493)~~

Witness Murray asserts that BST has based its proposed recurring charges for a variety of "flavors" of DSL-capable loops on cost studies that assume an all-copper network architecture. (Murray TR 2493) This, she argues, assumes the provisioning of all loops on copper feeder, regardless of length. Witness Murray argues that this is not the network architecture that BST deploys today, much less the network architecture that the company plans to deploy in the future. (TR 2493)

Witness Murray agrees that loop length is an important input underlying any loop cost study because costs for all loop types vary, at least to some degree, based on loop length. However, witness Murray asserts that DSL-capable loops are not unique in this respect. BST's proposal to single out DSL-capable loops for what is, in effect, deaveraged pricing based on loop length is unduly discriminatory. (Murray TR 2495)

Witness Murray notes that BST's proposed recurring price for a UCL-Long loop is \$52.66, almost three times its proposed price for a UCL-Short loop, \$18.13. Witness Murray asserts that this pricing scheme effectively restricts DSL providers to buying loops under 18 kft because the price of a longer loop is so high. Witness Murray argues that the price differential does not reasonably reflect the higher cost that BST would experience to make available all-copper loops over 18 kft to DSL providers. (TR 2497-2498)

According to witness Murray, BST's UCL-Long cost study purports to measure the weighted average cost for an all-copper configuration for all loops in its network over 18 kft long. Given the current technology, however, Data ALECS cannot use many of the long all-copper loops that BST has modeled because the practical

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have asked for this "unlimited length" loop and yet also state that no DSL technology could be deployed over such long loops.

Staff agrees that the ALECs, rather than BST, should determine and take the responsibility for the DSL service being provisioned. Many comments were made regarding DSL service being provisioned over a hybrid copper/fiber loop. Certainly, the Data ALECs view this technology as one worthy of an UNE status. On the other hand, there is no record evidence in this proceeding to set rates for a hybrid copper/fiber xDSL-capable loop. There is insufficient evidence regarding the specific components of the copper/fiber loops such as line cards, vendors, cost etc and their associated prices. Therefore, the only rates for xDSL-capable loops that can be set in this proceeding are for all-copper xDSL-capable loops. Staff's recommended recurring and nonrecurring rates for all-copper xDSL loops, reflecting staff's various recommended adjustments, are shown in Appendix A.

Notwithstanding the above, 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 notes that witnesses repeatedly stated that Data ALECs have no need or desire for a designed loop; for example, there is no need for a DLR, test points, or order coordination. Witness Riolo states that all xDSL-capable loops should be nondesigned loops except for a guarantee that the selected and ordered loop will not be rolled to another facility, such as fiber. (TR 2644) It is staff's understanding that these capabilities are reflected in BST's nonrecurring charges for certain xDSL loops. Staff sees merit in BST attempting to offering a product the Data ALECs desire. To this end, staff recommends that BST be required to file modified versions of its xDSL nonrecurring cost studies, which exclude 1) the DLR, 2) a test point, and 3) order coordination. The intent of this required study is to be able to set rates for a menu of provisioning options - - i.e., for each of these options separately. As noted above, although the Data ALECs want a nondesigned xDSL-capable loop, they also want a guarantee that the loop will not be rolled to another facility. Staff recommends that BST submit a proposed charge, if any, for this feature. Staff recommends that these nonrecurring items be provided in conjunction with the aforementioned hybrid copper/fiber recurring cost study

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lives are reasonable and should be approved for the purpose of setting UNE prices.

Technology-Sensitive Accounts

The technology-sensitive accounts (digital switching, circuit, and metallic and fiber cables) represent more than 70% of BellSouth's investment and are the most controversial. BellSouth's recommended projection lives are the result of using the technology substitution model, the purpose of which is to determine how fast a new technology is displacing an older technology. (EXH 52, p. 12; Cunningham TR 766, 842) The substitution model forecasts the rate at which fiber technology is substituting for copper technology plus the historical probability of the two technologies combined together. (EXH 24, p. 69) A basic assumption of the model is that Fiber-In-The-Loop (FITL) will bring broadband services to the home, displacing copper plant. (Majoros TR 953)

Regarding the substitution model, staff agrees with AT&T/WorldCom witness Majoros that an inherent flaw with the model is that it assumes the new technology will completely replace, not supplement, the old technology. (TR 954) For example, the Asynchronous Transfer Mode (ATM) switches will be deployed as a supplemental technology to digital switches, not as a replacement. (Majoros TR 954)

There are two major measurement inputs in the substitution analysis: the time in which new technology would equal 50% of the combined universe of old and new technology, and the rate at which the substitution actually occurs. (Cunningham TR 846-847) ~~Witness Cunningham explained that BellSouth used a regression analysis to develop these inputs based on historical and planning data. Historical and planning data were used in a regression analysis to arrive at these inputs.~~ (Cunningham TR 847) Substitution analysis as used by BellSouth does not depict retirements. (Cunningham TR 848) For the feeder cables, BellSouth used actual data for 1991-1994 and planning data for 1995-1999 in its substitution analysis. (EXH 24, pp. 71-72) For distribution cables, historical data was used for 1997-2000, four points, with planning points 2001-2005. (EXH 24, pp. 72-73)

Staff discussed a comparison of BellSouth's interoffice, feeder, and distribution copper cable remaining life development presented in its 1995, 1998, and 2000 depreciation studies with witness Cunningham at his deposition. (EXH 24, pp. 73-77) These

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plant equipment than what other companies are using. (Cunningham TR 866-867) Staff believes that this serves as another indication that an apples-to-apples comparison between BellSouth's proposed lives and those of other competitors cannot be made in this proceeding due to the lack of record evidence regarding an understanding of the basis of those lives.

Summary

Based on the above discussions, staff recommends use of the life projections of AT&T and WorldCom for each of the copper cable accounts. Staff believes there is sufficient evidence to question the reasonableness of BellSouth's proposed lives. For the fiber cable accounts, staff recommends use of BellSouth's proposed lives from its 2000 Florida Depreciation Study. (EXH 52, (GDC-1)) Staff agrees with BellSouth that with a new technology such as fiber cable, enhancements and refinements are still taking place due to such things as manufacturing defects and fiber clouding. (EXH 52, p. 316) While there is reason to believe that future generations of fiber cable will experience a life similar to copper cable, staff believes the earlier generations of this technology cannot be expected to experience that type of life characteristic.

For digital switching and digital circuit, staff recommends a ~~13-year life and an 8-year life, respectively~~ 13-year life for digital switching, an 8-year life for circuit DDS, and a 9-year life for digital circuit equipment. The life for digital switching recognizes increased interim retirements and a shorter overall life span as evidenced by BellSouth's submitted information. (Cunningham EXH 52, pp. 148-155) The recommended life for digital circuit recognizes a shorter life for optical equipment as asynchronous equipment is phased out and replaced with Synchronous Optical Network (SONET) equipment. While other digital circuit equipment can be expected to continue providing viable functions in a SONET environment, slower growth can be expected. (EXH 52, pp. 192-203) ~~Additionally, staff recommends a 6.8-year life for analog circuit equipment.~~

Salvage Values

There is no disagreement between the parties regarding the appropriate salvage values to use in determining UNE prices. Staff's review of these values results in a similar finding and recommends BellSouth's proposed salvage values be adopted. (EXH 52 (GDC-2), p. 15, Majoros TR 938)

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124, JCD/BFP-10, p. 7) The feeder cable sizing factor is not on page 7 of Exhibit 124, JCD/BFP-10.

Staff disagrees with the FCCA ALECs that the inputs from the Universal Service docket are appropriate in this instance. The instant proceeding is to determine generic prices for UNES; the Universal Service docket was in response to a legislative mandate. As this Commission stated in its order in the Universal Service docket, "[W]e note that this proceeding is not to determine the actual cost faced by any of these LECs, but is rather to estimate the forward-looking cost of an efficient provider building a scorched node network all at once, all at the same time." (Order No. PSC-99-0068-FOF-TP, page 129)

In summary, BellSouth's proposal is 2 pairs per household, with which Data ALECs witness Riolo also appears to agree. Staff is persuaded by witness Riolo's discussion on the appropriateness of 2 pairs per household. Staff believes that 2 pairs per household is reasonable, and in some instances may well be conservative. Therefore, staff recommends that the appropriate input per household is 2 pairs.

For business lines, the FCCA ALECs propose 3 pairs per business, while BellSouth's model uses the actual number of business lines. Staff believes that use of the actual number of business lines is more accurate and, thus, more reasonable than an assumed average number of lines. Therefore, staff recommends that the appropriate input for business is the actual number of lines.

Staff was unable to find much ALEC testimony specific to BellSouth's effective feeder fill of approximately 74 percent. This fill represents a ~~9 percentage point~~ increase over BellSouth's actual 1999 feeder fill factor of 65 percent. (EXH 61, p. 81) In the absence of record evidence to the contrary, staff believes that BellSouth's feeder cable inputs resulting in an effective fill of approximately 74 percent are reasonable.

SUMMARY

In summary, staff recommends that the appropriate assumptions and inputs for copper feeder and distribution fill factors are those recommended by BellSouth in its cost filing, resulting in

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

- (i) fiber cable (material and placement costs);
- (j) copper cable (material and placement costs);

RECOMMENDATION: The appropriate assumptions and inputs for fiber and copper cable material costs to use in the forward-looking UNE cost studies filed in this proceeding are those non-loaded material costs identified by BellSouth. The appropriate assumptions and inputs for the associated cable placement costs are those identified by BellSouth, as modified by staff's recommendation in Issue 7(s). (Lee)

POSITION OF THE PARTIES

BELLSOUTH: The appropriate assumptions and inputs that should be used in the development of forward-looking recurring costs are those set forth in the cost studies filed by BellSouth on August 16, 2000, and as supported by the testimony of BellSouth's witnesses.

DATA ALECS: Adopt FCCA position on items (e) to (l).

FCCA ALECS: The Commission should reject the material inflation factor BellSouth proposes, and adopt its material inputs from the USF proceeding for use in the BellSouth cost model.

SPRINT: 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.

TIME WARNER: Adopts FCCA ALECs' position.

~~**STAFF ANALYSIS:** The appropriate assumptions and inputs that should be used in the development of forward-looking recurring costs are those set forth in the cost studies filed by BellSouth on August 16, 2000, and as supported by the testimony of BellSouth's witnesses.~~

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~~DATA ALECS: Adopt FCCA position on items (e) to (l).~~

~~FCCA ALECS: The Commission should reject the material inflation factor BellSouth proposes, and adopt its material inputs from the USF proceeding for use in the BellSouth cost model.~~

~~SPRINT: 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.~~

~~TIME WARNER: Adopts FCCA ALECS position.~~

STAFF ANALYSIS: Fiber and copper cable are utilized as underground, buried, and aerial. The BellSouth Telecommunications, Inc. Loop Model (BSTLM) input sheets include costs for material, as well as factors depicting other components necessary so that the cost is provided for engineered, furnished, and installed cable, that is, ready-for-service. (Caldwell TR 1266; EXH 81, p. 113)

BellSouth

BellSouth's witness Caldwell describes BellSouth's development of its cable cost inputs:

BellSouth used BellSouth-specific costs for both copper and fiber cable. Material prices for copper and fiber cable were obtained from procurement records that reflect actual BellSouth purchase prices and contractual agreements. . . .future inflation trends (TPIs) were also taken into consideration in order to reflect forward-looking costs. Telephone company engineering and labor costs were derived from BellSouth's Florida in-plant loading factors. In-plant factors convert material prices to a Florida-specific installed investment. BellSouth-specific cable costs reflect economies of scale and vendor prices that an efficient provider would be able to expect to achieve on a going forward basis. (TR 1180)

BellSouth's material costs represent the average material price for a given size and type of cable. (EXH 61, p. 8) The costs

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technology plus the full cost of providing it with a different technology. BellSouth is not "mixing and matching," we are simply asking to recover the cost of the functions BellSouth actually performs to provide a UNE. (TR 1118)

In his refiled direct testimony Sprint witness McMahon that a non-recurring cost study should not emphasize the development of a single, average charge; rather, he believes a forward-looking non-recurring cost study ". . . should reflect as closely as possible the actual costs incurred in performing the required activity. . . ." (TR 3154) Such a study would incorporate the time required by an efficient provider to perform the necessary activities, and the cost to perform those activities based on current loaded labor rates. Basing non-recurring rates on such properly conducted studies would result in ALECs paying ". . . Non-recurring charges that relate directly to work actually performed on their behalf which, in turn, would ensure that the ILEC neither over, nor under-recover, non-recurring costs." (TR 3154)

Recommendation

Staff agrees with AT&T/WorldCom witness King's characterization of non-recurring costs as being the ". . . the efficient, one-time costs associated with establishing, disconnecting or rearranging unbundled network elements . . ." (TR 683) In his review and critique of BellSouth's cost studies witness King essentially assumed, e.g., the existence of a fully automated ordering system which could identify all errors on an electronically submitted local service request (LSR) and resubmit it to an ALEC. (TR 2417) However, he subsequently admitted that he was unaware if such system had actually been implemented anywhere. (TR 2497) Moreover, especially since the AT&T/WorldCom witness had asserted that a non-recurring cost study should reflect the use of efficient forward-looking technologies but those which were currently available and being deployed, staff believes that witness King's OSS assumption is unrealistic. Rather, we believe witness Caldwell was on mark when she testified that network modeled in a non-recurring study should be "attainable." (TR 130) Staff agrees with witness King that a non-recurring study should not necessarily be restricted solely to modeling activities incurred in the past; we endorse witness Caldwell's assertion that non-recurring studies

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Table 8d-13 - Effect of Staff's Recommendation on the First Installation of the SL2 Loop (time in minutes)

Category	BellSouth's Proposed Time	Staff's Proposed Time
CPG	4.95	4.95 - 50% or 2.475
PICS	.29	.29 - 45% or .1595
AFIG	2.4	2.4 - 50% or 1.2
SAC	6	6 - 50% or 3
UNEC	101.73	(101.73 - 10.175 (Provisioning variable of 3.57 applied three times at different probabilities)) - 45% or 50.3553
WMC	15	15 - 65% or 5.25
CO I&M	17	17 - 20% or 13.6
SSI&M	128.71	128.71 - 35% or 83.6615
Travel	20	20
TOTAL	296.08	179.7013

Source: EXH 95, FL-2W.xls, pp. 3, 5, 6-9

SUMMARY

In summary, staff recommends that BellSouth's work times be adjusted as shown in Table ~~8d-13~~ 8d-14 on the following page.

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Table ~~8d-1~~ ~~8d-14~~ - Staff's Recommended Adjustments

Category	Staff's Recommended Adjustments for BellSouth's Installation and Disconnect Work Groups and Work Times
CRSG Incremental Time	Eliminate work times
CRSG	Reduce work times by 55%
LCSC	Reduce work times by 75%
SAC	Reduce work times by 50%
AFIG	Reduce work times by 50%
CPG	Reduce work times by 50%
UNEC Provisioning Variables	Eliminate work times
UNEC	Reduce work times by 45%
WMC	Reduce work times by 65%
CO I&M	Reduce work time by 20%
SSI&M	Reduce work times by 35%
Travel	No Adjustment
All other work groups	Reduce work times by 45%

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penetration rate for telephone subscribership in order to calculate the number of lines that should be reserved to accommodate new voice service demand. Based on these numbers, 19 pairs would need to be reserved for future voice applications. (TR 2943)

Witness McPeak further assumes that one-half of all new customers will add a second line; therefore, in order to calculate the number of lines to be set aside for future voice demand over the next 4 years, 99% of new residents are assumed to require new voice service, and one-half of those new customers will require 2 lines. Based on these numbers, witness McPeak estimated that 29 lines will need to be set aside. (TR 2943) Then applying the fill factor of 58%, 253 of the 600 pairs per cable are spare. The witness then subtracted the 29 lines that BellSouth would set aside for future customers to arrive at 224 loops. Witness McPeak asserted that although 224 pairs under 17,500 feet may be available for conditioning at an existing location, ~~I have~~ he has presumed only that BellSouth will condition 25 pairs at a time. (TR 2944)

Witness McPeak argues that there are many reasons for taking advantage of the efficiencies associated with conditioning multiple pairs. He believes that the time estimates proposed by BellSouth will be lowered when conditioning a minimum of 25 loops for each dispatch. In addition, he notes that the tools technicians use to splice connections are designed to condition multiple pairs. These tools generally are either a Lucent 710 25-pair splice connector or 3M MS² 25-pair splice connector. He argues that with the advent of such tools and other similar process enhancements, single pair splicing has become an outdated practice in the telecommunications industry for decades. (TR 2946)

Witness McPeak believes another reason for conditioning multiple pairs at a time is that multiple re-entries to splice closures in order to condition loops can cause serious degradation of the wire insulation and can cause failure of the wire. In other words, he believes that accessing the same network components over and over again has the effect of wearing them out. He argues that common sense dictates that it would be more efficient and would cause less wear and tear if access occurred as infrequently as possible. He believes this can be accomplished by conditioning multiple loops at a time. Witness McPeak notes that the cable containing the pairs generally are divided up into twenty-five pair binder groups and in most cases, the twenty-five pair binder groups are spliced using splicing connectors that actually connect twenty-

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basically took 40 percent of that cost and spread it over the demand in simple terms. (TR 1368)

She was then asked: "And then that assumption then gets mapped against some demand that you actually incur? Because as I understand your answer a few moments ago, if demand goes up that is going to lower the amount of the unrecovered. The amount that you don't recover is going to go down if the demand goes up." She replied:

Your last statement is correct. What I have actually done is we have demand that we have -- actually what we had to do in 1999 as a guide and then we have three years worth of projected demand because I need to look out into the future. (TR 1368-1369)

Witness Caldwell was also asked:

. . . If you were adhering to a forward-looking approach to costing, would you want to modify this cost allocation method for conditioning at some point in time? It would occur to me that if you observed that you are consistently not using 40 percent of the pairs that you condition that that may be a cost that you should review to determine whether or not it is the one you should incur, would you agree? (TR 1399-1400)

Witness Caldwell agreed and noted that BellSouth would be open to any suggestion that ~~we~~ review any of these studies. (TR 1400)

When asked about the demand assumptions used in developing the additive, witness Latham noted that:

First of all, as I mentioned earlier, we do forecasts for all of our unbundled-loop types. And typically how we arrive at those is by looking at historical data, to the extent that we have it to look at, trends to see, you know, over some period of time what is the typical growth that we've seen. . . . Then this information that's contained in this document would have been the output of that forecast for those loop types that we wanted to spread the additive across. So for the ADSL and HDSL and UCL loops less than 18,000 feet, we would have gotten the demand for those loop types and used that as a divisor

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TABLE 11-18 BURIED CABLE BRIDGED TAP REMOVAL AT A PEDESTAL (50% occurrence)	
Description	Task min.
1 Travel time to buried splice location.	20
2 Set up traffic cone at rear bumper of truck.	1
3 Walk to site & open splice pedestal.	2
4 ID PIC pairs for brdg. tap removal for 1 st 25-pair binder group.	2
5 Remove bridging modules or cut & clear pairs for 1st 25-pair group.	2
6 ID PIC pairs for brdg. tap removal for 2 nd 25-pair binder group.	2
7 Remove bridging modules or cut & clear pairs for 2nd 25-pair group.	2
8 Secure splice within buried pedestal and clean up work area.	3
9 Close down buried site, stow tools and traffic cone.	5
Total Minutes	39
Total Hours	0.65
No. Technicians	1
Total Timesheet Hours	0.65
No. Locations	0.5
Total Hours	0.33
Pairs Unbridged	50
Minutes per pair	0.40

(Source: Riolo TR 2727)

CONCLUSION

As with load coil removal, Data ALECs witness Riolo argues that ILECs should bear the entire cost of removing bridged tap when industry standards are ignored and outside plant maintenance is neglected. (TR 2741) However, staff does not believe that witness Riolo provided sufficient information which demonstrates that BellSouth "violated industry standards" or that there is some standard that dictates how an ILEC must maintain its outside plant. Therefore, staff is not convinced ~~not believe~~ that the ILEC should bear the entire cost of bridged tap removal.

Sprint witness McMahon argues that BellSouth's work times are inflated and that Sprint pays its contractors significantly less to remove bridged taps. As was discussed earlier in this recommendation, staff agrees with Sprint witness McMahon that an ALEC should not pay for BellSouth's inefficiencies. However, we disagree that BellSouth's costs for work activities performed by BellSouth's employees should be developed using contractor rates, as opposed to the actual rates BellSouth pays its employees. (EXH 106, pp. 22-23) In his testimony witness McMahon provided specific

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APPENDIX A - RATE COMPARISON

ELEMENT NUMBER & DESCRIPTION		BELLSOUTH PROPOSED RATES			AT&T/WORLDCOM PROPOSED RATES			BLUESTAR/COVAD /RHYTHMS PROPOSED RATES		STAFF PROPOSED RATES		
		RECURRING	NON-RECURRING Including First	NON-RECURRING ADD'L	RECURRING	NON-RECURRING Including First	NON-RECURRING ADDITIONAL (If Different)	NON-REC. FIRST	NON-REC. ADD'L	RECURRING	NON-RECURRING Including First	NON-RECURRING ADDITIONAL (If Different)
P.5.7	4-Wire DS1 Dig. Loop / 4-Wire ISDN DS1 Dig. Trunk Port Comb - Subseq. Outw. Telephone #s		\$23.02		\$1.15						\$12.71	
P.5.8	4-Wire DS1 Dig. Loop / 4-Wire ISDN DS1 Dig. Trunk Port Comb - Subseq. Inw. Telephone #s		\$46.05		\$2.31						\$25.42	
P.6	2-WIRE VOICE GRADE EXTENDED LOOP WITH DEDICATED DS1 INTEROFFICE TRANSPORT											
P.6-1	First 2W VG in DS1											
	Zone 1	\$266.14								\$252.61		
	Zone 2	\$270.09								\$258.47		
	Zone 3	\$275.53								\$284.13		
	P.17.1 Nonrecurring Cost for Extended Loop or Local Channel and Interoffice Combination Switch-As-Is		\$11.19	\$11.19							\$8.98	\$8.98
	P.17.1 Nonrec. Cost for Extd. Loop or Local Channel and Interoffice Combination Switch-As-Is - Disc Only		\$12.93	\$12.93							\$10.39	\$10.39
	Nonrecurring Cost - 2-wire VG Extended Loop with Dedicated DS1 Interoffice Transport - NEW		\$625.63	\$342.38							\$511.99 \$352.78	\$292.49 \$271.90
	Nonrec. Cost - 2-wire VG Extended Loop with Dedicated DS1 Interoffice Transport - NEW - Disc. Only		\$150.32	\$45.80							\$107.75	\$45.07
P.6-2	D.4 Interoffice Transport - Dedicated - DS1 - Per Mile	\$0.2000								\$0.1856		

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ELEMENT NUMBER & DESCRIPTION		BELLSOUTH PROPOSED RATES			AT&T/WORLDCOM PROPOSED RATES			BLUESTAR/COVAD /RHYTHMS PROPOSED RATES		STAFF PROPOSED RATES		
		RECURRING	NON-RECURRING Including First	NON-RECURRING ADD'L	RECURRING	NON-RECURRING Including First	NON-RECURRING ADDITIONAL (If Different)	NON-REC. FIRST	NON-REC. ADD'L	RECURRING	NON-RECURRING Including First	NON-RECURRING ADDITIONAL (If Different)
P.13	4-WIRE DS1 DIGITAL EXTENDED LOOP WITH DEDICATED DS3 INTEROFFICE TRANSPORT											
P.13-1	First DS1 in DS3											
	Zone 1	\$1,449.79								\$1,377.09		
	Zone 2	\$1,476.98								\$1,406.77		
	Zone 3	\$1,552.00								\$1,536.71		
	P.17.1 Nonrecurring Cost for Extended Loop or Local Channel and Interoffice Combination Switch-As-Is		\$11.19	\$11.19							\$8.98	\$8.98
	P.17.1 Nonrec. Cost for Extd. Loop or Local Channel and Interoffice Combination Switch-As-Is- Disc. Only		\$12.93	\$12.93							\$10.39	\$10.39
	Nonrec. Cost - 4-wire DS1 Digital Extd. Loop with Ded. DS3 Interoffice Transport- New		\$1,192.63	\$565.26							\$857.76	\$380.00 \$526.35
	Nonrec. Cost - 4-wire DS1 Digital Extd. Loop with Ded. DS3 Interoffice Transport- New - Disc. Only		\$166.14	\$69.04							\$190.72	\$139.88
P.13-2	D.6.1 Interoffice Transport - Dedicated - DS3 - Per Mile	\$4.17								\$3.87		
P.13-3	Additional DS1 in same DS3											
	Zone 1	\$106.89								\$94.90		
	Zone 2	\$134.08								\$124.58		
	Zone 3	\$209.10								\$254.52		
	P.17.16 Nonrecurring Cost - New Feature Activation for Combination Use Only		\$12.16	\$8.77							\$6.71	\$4.84