BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of	:	DOCKET NO. 960833-TP
	:	DOCKET NO. 960846-TP
Petitions by AT&T Communications of the Southern States, Inc., MCI Telecommunications Corporation, MCI Metro Access Transmission Services, Inc., and American Communications Services, Inc., and American Communications, Services of Jacksonville, Inc., for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc., concerning Interconnection and Resale under the Telecommunications Act of 1996.	:	DOCKET NO. 960916-TP

THIRD DAY - MORNING SESSION

VOLUME 15

Pages 2146 through 2274

PROCEEDINGS: **HEARING**

BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA

DATE: Friday, October 11, 1996

TIME: Commenced at 11:00 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: H. RUTHE POTAMI, CSR, RPR
Official Commission Reporter
(904) 413-6734

APPEARANCES:
(As heretofore noted.)

DOCUMENT NUMBER-DATE
10942 OCT 11 96
FPSC-RECORDS/REPORTING

WITNESSES - VOLUME 15

EXHIBITS - VOLUME 15

PROCEEDINGS

(Transcript follows in sequence from Volume 14.)

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D. DAONNE CALDWELL

was called as a witness on behalf of BellSouth Telecommunications, Inc. and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. LACKEY:

Q Have you been sworn, Ms. Caldwell?

A Yes, I have.

Q Would you state your name and address for the record?

A My name is Doris Daonne Caldwell. My business address is 675 West Peachtree Street N.E., Atlanta, Georgia.

Q And by whom are you employed?

A BellSouth Telecommunications Inc.

Q Ms. Caldwell, we have a number of sets of testimony to go through here, so I'm going to try to do it company by company.

Did you cause to be prefiled in the AT&T portion of this proceeding direct testimony on August 12th consisting of 25 pages of questions and answers

accompanied by 22 exhibits?

A Yes, I did.

MR. LACKEY: Madam Chairman, the prehearing order only reflects 21 exhibits, but there actually is a 22nd exhibit attached. I overlooked that when I was looking at the prehearing order. The 22nd exhibit is the LIDB database study, or analysis.

Q **(By Mr. Lackey)** Ms. Caldwell, did you also cause to be filed in this docket supplemental testimony on August 23rd consisting of six pages of questions and answers?

A Yes, I did.

Q And in this same AT&T proceeding, did you cause to be filed on August 30th rebuttal testimony consisting of 10 pages?

A Yes, I did.

Q And the only exhibits that accompany the AT&T testimony were the 22 attached to your direct testimony?

A That is correct.

Q Do you have any changes or corrections to the direct, supplemental or rebuttal testimony that we just identified?

A No, I do not.

Q And if I were to ask you the questions that

appear there, would your answers be the same?

A Yes, they would.

Q Do you have any changes or corrections to the exhibits?

A No, I do not.

Q We'll move to the next set, and then I'll move them all at once. In the MCI portion of this proceeding, on September 9th did you file 10 pages of direct testimony in question and answer form?

A Excuse me. Is that the 960846 docket?

Q Just a moment let me look. It's the 960 -- I'm sorry. Just a minute. It is the 96086 (sic) docket, and I asked you about your direct testimony in that docket filed on September 9th, 1996. Did it consist of 10 pages?

COMMISSIONER KIESLING: I'm sorry. You confused me even more. Which docket is the MCI?

MR. LACKEY: I'm showing it -- pardon?

MS. WHITE: 960846.

MR. LACKEY: That's what I show it is.

COMMISSIONER KIESLING: Thank you.

Q **(By Mr. Lackey)** I'm sorry. The AT&T testimony I was just referring to was in the 860833 (sic) docket; is that correct?

A That's correct.

Q Now I've moved -- wait a minute.

CHAIRMAN CLARK: Just go slow, Mr. Lackey. We'll wait for you.

MR. LACKEY: Can I move all Ms. Caldwell's testimony into the record without objection?

CHAIRMAN CLARK: I'm just not sure what all it consists of.

Q **(By Mr. Lackey)** All right. Ms. Caldwell did you file direct, supplemental and rebuttal testimony in the AT&T docket?

A Yes, sir, I did.

Q Did you file direct and rebuttal testimony in the MCI docket?

A Yes, I did.

Q Did you file direct and rebuttal testimony in the ACSI docket?

A Yes, I did.

Q And with regard to the ACSI direct --

COMMISSIONER KIESLING: Hold on. I don't have it all, then. That concerns me.

MR. LACKEY: You mean there may be a possibility it's not my fault?

COMMISSIONER KIESLING: Yes. I have only direct in my folder --

CHAIRMAN CLARK: I'm missing a piece, too.

I only have --

COMMISSIONER KIESLING: -- for MCI.

CHAIRMAN CLARK: Right. It doesn't look like I have rebuttal for MCI.

COMMISSIONER KIESLING: And I have only direct and rebuttal for ACSI.

WITNESS CALDWELL: Excuse me. I'm sorry. I made a mistake. I only filed the direct in MCI.

MR. LACKEY: Well, then, I made the mistake, Ms. Caldwell.

COMMISSIONER KIESLING: If you're going to ask leading questions, at least make sure that they're right. (Laughter.)

MR. LACKEY: You're exactly right. I do much better when I make them up instead of trying to write them down like I've done here.

CHAIRMAN CLARK: So the record reflects the correct testimony, there is in the AT&T docket, which is 960833, direct, supplemental direct and rebuttal testimony. In docket 960846, which is the MCI, there is only direct testimony, and in the docket for ACSI, there is direct and rebuttal testimony, and that is Docket 960916.

MR. LACKEY: Exactly.

CHAIRMAN CLARK: That testimony will be

inserted in the record as though read. Exhibits, Mr. Lackey.

Q (By Mr. Lackey) In addition to the 22 exhibits accompanying your AT&T direct testimony, did you have four exhibits attached to your ACSI direct testimony?

A Yes, I did.

Q Thank goodness.

MR. LACKEY: Madam Chairman, could I have the exhibits -- I think probably we have a problem. Some of the AT&T exhibits are proprietary, so perhaps we need to number them sequentially.

CHAIRMAN CLARK: Mr. Lackey, let's deal with what is, I think, DDC-1 through 22, which is attached to her direct testimony filed in the AT&T docket. What about those? And we'll mark is that as Composite Exhibit 65.

MR. LACKEY: The only problem I have with that is that Exhibits 1 through 7 are -- I'm sorry -- 1 through 6 are not proprietary, DDC-6, 1 through DDC-6 are not proprietary. 7, 8, 9, 10, 11 --

CHAIRMAN CLARK: Up to 20, I believe.

MR. LACKEY: Up to 20 are proprietary, and then 21 and 22 are not proprietary. So I think it ought to be in three groups, at least, if you're going

to bundle them together.

CHAIRMAN CLARK: What I have done is the exhibits attached to Ms. Caldwell's direct testimony in 960833 labeled DDC-1 through 6, and 21 and 22 will be marked as be Exhibit 65.

(Exhibit 65 marked for identification.)

CHAIRMAN CLARK: DDC-7 through 20, which are proprietary, which contain proprietary information, will be marked as Exhibit 66.

(Exhibit 66 marked for identification.)

MR. LACKEY: And then she has four exhibits that are attached to the ACSI direct, which are not proprietary.

CHAIRMAN CLARK: All right. DDC-1 through 4 which are attached to the direct testimony in Docket 960916 will be marked as Exhibit 67. Okay.

(Exhibit 67 marked for identification.)

Q (By Mr. Lackey) Ms. Caldwell, in addition to the testimony and exhibits including -- that we've just discussed, on October 4th of this year did you cause an additional exhibit to be filed which consists of the Florida unbundled loops cost study, the TELRIC study that's been referred to here?

A Yes, sir.

MR. LACKEY: Madam Chairman, I think that is

also -- needs to be marked as an exhibit. The study is proprietary, the output numbers are not.

CHAIRMAN CLARK: Is there one exhibit?

MR. LACKEY: Yes, ma'am.

CHAIRMAN CLARK: I'm just going to mark the TELRIC study, note that it's confidential, and mark it as Exhibit 68.

(Exhibit 68 marked for identification.)

MR. LACKEY: Thank you.

Q **(By Mr. Lackey)** I should have asked you, you don't have any changes or corrections to any of those exhibits, do you, the TELRIC that we just talked about?

A No, sir.

MR. LACKEY: And, Madam Chairman, you included it all in spite of my ineptness in the record, I take it?

CHAIRMAN CLARK: I marked all those exhibits, and the testimony has been moved in.

MR. LACKEY: Thank you.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 12, 1996

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., N.E., Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. (hereinafter referred to as "BellSouth" or "the Company"). My area of responsibility relates to economic service costs.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I attended the University of Mississippi, graduating with a Master of Science Degree in mathematics. I have attended numerous Bell Communications Research, Inc. (Bellcore) courses and outside seminars relating to service cost studies and economic principles.

My initial employment was with South Central Bell in 1976 in the Tupelo, Mississippi, Engineering Department where I was responsible for Outside Plant Planning. In 1983, I transferred to BellSouth Services, Inc. in Birmingham, Alabama, and was responsible for the Centralized Results

System Database. I moved to the Pricing and Economics Department in 1984 where I developed methodology for service cost studies until 1986 when I accepted a rotational assignment with Bell Communications Research, Inc. While at Bellcore, I was responsible for development and instruction of the Service Cost Studies Curriculum including courses such as "Concepts of Service Cost Studies", "Network Service Costs", "Nonrecurring Costs", and "Cost Studies for New Technologies". In 1990, I returned to BellSouth and was appointed to a position in the cost organization, which is now a part of the Finance Department, with the responsibility of managing the development of cost studies for transport facilities, both loop and interoffice.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the cost methodology used in the Long Run Incremental Cost (LRIC) and Total Service Long Run Incremental Cost (TSLRIC) studies for the unbundled elements that BellSouth will provide to the Alternative Local Exchange Companies (ALECs) in Florida. Specifically, I will address the cost studies for the following network elements:

- Unbundled Loops
- Unbundled Ports and Associated Local Usage
- Unbundled Loop Channelization Systems and Central Office Channel Interfaces (located in the BellSouth central office buildings)
- Special Access Voice Grade Service Interoffice Channel Voice -
- Unbundled Exchange Access

- Operator Services
- Directory Assistance
- Common Channel Signaling
- Database Services

The cost studies include all the volume sensitive and volume insensitive long run incremental costs associated with the provision of these unbundled elements.

Q. DOES YOUR TESTIMONY ADDRESS THE DIRECT TESTIMONY OF AT&T WITNESSES IN THIS PROCEEDING?

A. No. My testimony does not address the testimony which AT&T has filed subsequent to the filing of its petition. Responses to AT&T's testimony will be included in the Company's rebuttal testimony in this docket.

Q. DOES YOUR TESTIMONY ADDRESS THE RECENTLY ISSUED FEDERAL COMMUNICATIONS COMMISSION (FCC) RULES?

A. No. The FCC's rules were not received in time to be incorporated in this testimony. Comments related to the impact of the FCC's rules will be included in subsequent testimony in this docket.

Q. PLEASE LIST THE UNBUNDLED ELEMENTS FOR WHICH BELLSOUTH PROVIDED COST STUDIES IN DOCKET NO. 950984-TP?

A. On May 28, 1996, in Docket No. 950984-TP, BellSouth filed cost studies for the following unbundled elements:

- 2-wire analog voice grade unbundled loops
- 4-wire analog voice grade unbundled loops
- 2-wire ISDN digital grade unbundled loops
- 4-wire DS1 digital grade unbundled loops
- Unbundled 2-wire analog line ports
- Unbundled 2-wire ISDN digital line ports
- Unbundled 2-wire analog DID trunk ports
- Unbundled 4-wire DS1 digital DID trunk ports
- Unbundled 4-wire ISDN DS1 digital trunk ports
- Local measured usage associated with the unbundled 2-wire analog line port
- Local measured usage associated with the unbundled 2-wire ISDN digital line port
- Local measured usage associated with the unbundled 4-wire ISDN DS1 digital trunk port
- Unbundled loop channelization systems and central office channel interfaces

Revised cost studies for these elements are being filed with my testimony in this proceeding.

Q. WHAT REVISIONS ARE REFLECTED IN THE REVISED COST STUDIES?

A. The substantive revisions are as follows:

- Nonrecurring costs for the unbundled 2-wire analog loop are revised based on updated work times.
- Nonrecurring costs are revised to reflect a change in the disconnect factor and location lives.
- Software right-to-use (RTU) costs for the unbundled ports are expressed as an equivalent recurring cost as well as a nonrecurring cost. Additionally, volume insensitive RTU costs are identified separately and RTU costs are revised to reflect updated data.
- Local Usage associated with the various ports is calculated to include the expanded local calling area and the cost results are expressed to match the existing tariff rate structure.
- The unbundled voice grade loops reflect updates to the Digital Loop Carrier File and the Main Distributing Frame calculations.
- The 2-wire analog line port is disaggregated into residence, business, and PBX ports.

Q. PLEASE LIST THE ADDITIONAL UNBUNDLED ELEMENTS FOR WHICH BELLSOUTH IS FILING COST STUDIES WITH YOUR TESTIMONY IN THIS PROCEEDING?

A. Cost studies for the following unbundled elements requested by AT&T are also being filed in addition to the previously filed studies:

- Special Access Voice Grade Service Interoffice Channel Voice - Unbundled Exchange Access
- Operator Services
- Directory Assistance
- Common Channel Signaling
- Database Services

Cost studies for Coin Port and Operator Services Call Trace are currently in progress and will be filed when they are completed.

Q. ARE COST STUDIES BEING PROVIDED FOR ALL THE UNBUNDLED NETWORK ELEMENTS THAT AT&T HAS REQUESTED?

A. No. Cost studies are being filed only for the unbundled elements that BellSouth plans to offer to the ALECs. Mr. Milner's testimony identifies the elements which are not technically feasible and explains the Company's position.

Q. WHY WERE COST STUDIES PERFORMED FOR THE UNBUNDLED ELEMENTS?

A. The cost studies for the unbundled elements were developed to support monthly and nonrecurring rates that will be charged for the unbundled elements. The monthly rates are supported by the recurring costs included in the studies. Recurring costs include both capital and non-capital costs. Capital costs consist of depreciation, cost of money, and income tax. Non-capital recurring costs are operating expenses and consist of maintenance, ad valorem taxes and gross receipts taxes.

Nonrecurring costs include the one time expenses for the labor intensive provisioning effort required to provide a particular service. These nonrecurring costs support nonrecurring rates. Additionally, RTU fees associated with the switch ports are one time expenses and are nonrecurring costs. The RTU fees are expressed as nonrecurring costs and as unit recurring equivalent costs in the cost studies for the unbundled elements. The Pricing Organization decides whether to recover the cost in either the recurring rates or the nonrecurring rates.

Q. WHAT COST METHODOLOGY IS USED IN THE COST STUDIES FOR UNBUNDLED ELEMENTS?

A. Incremental costing techniques are used to identify the incremental costs associated with providing these elements. Incremental costs are based on cost causation and include all of the costs directly caused by expanding production, or alternatively, costs that would be saved if the production levels were reduced. The production unit could be an entire service or a unit of a service.

Costs may be volume sensitive and/or volume insensitive. Long run incremental cost studies ensure that the time period studied is sufficient to capture all forward looking costs affected by the business decision being studied.

Q. IS THE COST METHODOLOGY USED FOR THE UNBUNDLED ELEMENTS DIFFERENT FROM THE COST METHODOLOGY USED TO DEVELOP LONG RUN INCREMENTAL COSTS FOR SERVICES BELLSOUTH PROVIDES TO END USER CUSTOMERS?

A. No. BellSouth uses the same cost methodology to develop long run incremental costs for unbundled elements provided to ALECs and for service provided to end user customers.

Q. DO THE LRIC AND TSLRIC STUDIES FOR THE UNBUNDLED ELEMENTS INCLUDE SHARED OR COMMON COSTS?

A. No. The long run incremental and total service long run incremental cost studies do not include shared or common costs. The LRIC studies for the unbundled elements include only the volume sensitive direct long run incremental costs associated with providing these elements. The TSLRIC studies include volume insensitive long run incremental costs in addition to the LRIC. Other BellSouth witnesses, such as Dr. Emmerson and Mr. Scheye will more fully address the pricing and cost recovery issues.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN EACH OF THE FOUR TYPES OF UNBUNDLED LOOPS (2-WIRE ANALOG VOICE GRADE, 4-WIRE ANALOG VOICE GRADE, 2-WIRE ISDN DIGITAL GRADE, AND 4-WIRE DS1 DIGITAL GRADE)?

A. The unbundled loop is the facility used to connect an ALEC's customer premises with the BellSouth central office. The voice grade and ISDN unbundled loops begin at a connection on the Main Distributing Frame in the BellSouth central office and the DS1 unbundled loop begins at a connection on a DSX-1 cross connect panel in the BellSouth central office. At the ALEC's customer premises, the loop includes the cabling up to and including the network interface. All outside plant components of the network utilized between the central office and the ALEC's customer premises are included. The network components include copper cables, poles, conduit, fiber optic cables, and multiplexing equipment. Attachment DDC-1 to my testimony depicts the basic architecture for each of the four unbundled loops.

Q. WHAT TECHNOLOGIES ARE INCLUDED IN THE UNBUNDLED LOOP COST STUDIES?

A. The technologies differ depending on the type of loop being provisioned. The voice grade and ISDN unbundled loop studies analyze two technologies: copper and digital loop carrier on fiber. Copper and digital loop carrier on fiber represent forward looking technologies and the most efficient method of

deploying voice grade (2-wire and 4-wire) and 2-wire ISDN unbundled loops now and in the future.

The unbundled DS1 digital grade loop study analyzes five network designs (architectures) that will be used on a forward looking basis to deploy DS1 loops. The five designs can be categorized into two basic technologies: copper and Synchronous Optical Network (SONET) fiber rings.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR UNBUNDLED LOOPS?

A. The generic steps involved in developing recurring costs for unbundled loops are listed below. Each of the four unbundled loops is studied separately and the unique characteristics of each, such as transmission level and loop length, are taken into consideration. Attachment DDC-2 provides a flowchart depicting the specific steps for developing the recurring costs for the unbundled 2-wire analog voice grade loop.

Step 1: Determine the network designs (architectures) which will be used to deploy the loop. (Loop sample data is gathered for the voice grade and ISDN loops. Design probabilities are determined for the DS1 loop from network subject matter experts.)

Step 2: Determine material prices and/or investments for the items of plant used in each design and/or each loop sample. Material prices are obtained from BellSouth contracts with various vendors.

Step 3: Apply in-plant factors and telephone plant indices as appropriate to determine base year investments. In-plant factors are applied to material prices in order to convert the material price to an installed investment which includes the cost of material, engineering labor and installation labor. Telephone plant indices estimate the changes in material price and/or installed investment over time.

Step 4: Adjust the investments for utilization to account for spare capacity. Spare capacity is required for maintenance and growth.

Step 5: Apply investment inflation factors to the investments to convert the utilized base year investments to investments representative of a three year planning period.

Step 6: Apply loading factors to the investments to determine investments for miscellaneous common equipment and power, land, buildings, poles and conduit as appropriate.

Step 7: Weight the investments to determine an average investment for a typical loop and add the results to determine an investment by plant account for the service. The investment for each loop in the loop sample is calculated

and then an average loop investment is determined for the voice grade and ISDN unbundled loops. The DS1 study uses the probability of occurrence of the designs for weighting.

Step 8: Convert the investments by plant account to annual costs by applying account specific annual cost factors to the various investments. Add the annual costs for the various accounts and then divide by 12 to determine a total monthly cost for the service.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR EACH TYPE OF UNBUNDLED LOOP?

A. Nonrecurring costs for the unbundled loops are the one time costs associated with provisioning, installing, and disconnecting the unbundled loops. These costs include four major categories of activity: service order processing, engineering, connect and test, and technician travel time. Examples of the work activities in each of these categories are as follows:

- Service order processing - Prepare and issue service order
- Engineering - Assign cable and pair; Design circuit; Order plug-in
- Connect and Test - Install circuit; Test circuit
- Technician Travel Time - Travel to the ALEC's customer premises

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR ALL FOUR TYPES OF UNBUNDLED LOOPS?

A. The generic process for developing the nonrecurring costs for unbundled loops is as follows:

Step 1: Determine the cost elements to be developed.

Step 2: Define the work functions.

Step 3: Establish work flows.

Step 4: Determine work times for each work function.

Step 5: Develop directly assigned labor costs for each work function (labor rate x work time).

Step 6: Accumulate work function costs to determine the total nonrecurring costs for each cost element.

Attachment DDC-3 provides a flowchart depicting the nonrecurring cost development.

Q. WHY IS THE 2-WIRE UNBUNDLED LOOP COST STUDY RESULT, FILED IN THIS PROCEEDING DIFFERENT FROM THE UNBUNDLED LOOP COST STUDY RESULT FILED ON JANUARY 2, 1996, BY BELLSOUTH UNDER DISCOVERY ASSOCIATED WITH DOCKET NO. 950984-TP?

A. The results are different because the study parameters have changed. The 2-wire unbundled loop cost study provided under discovery in Docket No. 950984-TP was based on the 1994 Loop-Is-A-Loop (LIAL) cost study. The

1994 LIAL cost study used older inputs, was not class of service specific, and developed a monthly cost based on modeling a typical loop. The cost study filed with this proceeding uses current inputs, such as material prices and annual cost factors. More importantly, the new study is based on the 1995 Loop Survey data. The 1995 Loop Survey is a state wide sample of loops that is statistically valid by class of service. The new unbundled 2-wire analog voice grade loop is based on residence and business loops rather than all classes of service. In addition, costs are developed for each sample loop rather than modeling a typical loop.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN EACH OF THE FIVE TYPES OF UNBUNDLED PORTS (2-WIRE ANALOG LINE (RESIDENCE, BUSINESS, AND PBX), 2-WIRE ISDN DIGITAL LINE, 2-WIRE ANALOG DID TRUNK, 4-WIRE DS1 DIGITAL DID TRUNK, AND 4-WIRE ISDN DS1 DIGITAL TRUNK)?

A. The unbundled port is the facility used to connect an ALEC's loop to a BellSouth end office switch. The facility includes the connection on the Main Distributing Frame, the jumper to the switch, and the non-traffic sensitive termination in the switch. BellSouth uses the Switching Cost Information System (SCIS), a Bellcore cost model, to develop the vendor engineered, furnished, and installed (EF&I) investment associated with these items of plant. The SCIS model outputs reflect vendor design criteria, BellSouth engineering rules, and customer usage characteristics. Attachment DDC-4 illustrates the basic architecture of the unbundled ports.

Local measured usage is associated with the 2-wire analog line (residence, business, and PBX), 2-wire ISDN digital line and 4-wire ISDN DS1 digital trunk unbundled ports. This usage includes the traffic sensitive switching cost of the end office for both intraoffice and interoffice calls within the local calling area of that end office. Additionally, local tandem switching and interoffice transport are included. Attachment DDC-5 shows an illustrative example of a local exchange network.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR UNBUNDLED PORTS AND LOCAL MEASURED USAGE?

A. The recurring cost study process is basically the same for any service or network element. Therefore, the process (steps) outlined for the unbundled loops is generally the same as for the unbundled ports. However, the unique characteristics of each element must be considered. For the unbundled ports, SCIS models the switch characteristics and identifies the direct incremental investments associated with providing the unbundled ports. SCIS adjusts the investments for equipment used for administrative purposes. The SCIS output investment is basically processed as outlined in steps 3 and 5 through 8 for the unbundled loops to determine the monthly cost per port.

The Network Cost Analysis Tool (NCAT), a Bellcore cost model, is used to calculate the cost associated with the first and additional minute per local call. The NCAT model is very complex, as is the public switched network.

Thousands of data inputs from numerous company sources are used to populate the database files of NCAT. For example, the inputs include end office switching investments, interoffice investments, and local service point-to-point usage data. A demand change or stimulation factor is used to determine incremental messages and minutes for local usage associated with the unbundled port. NCAT calculates the incremental costs associated with the various network components impacted by the incremental (or change in) demand. The processing of an ISDN call consumes switch resources incremental to a Plain Old Telephone Service (POTS) call. Therefore, additional switch costs are identified using SCIS and are added to the NCAT results for the ISDN unbundled ports.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR EACH TYPE OF UNBUNDLED PORT?

A. The nonrecurring costs for the unbundled port include the costs associated with provisioning, installing, and disconnecting the unbundled ports and RTU costs where applicable. The RTU costs are also expressed as unit recurring equivalent costs. Specifically, the nonrecurring costs for the 2-wire analog line, 2-wire ISDN digital line and the 4-wire ISDN digital trunk port include costs for processing the service order, assigning the line and number, processing the switch translations, and RTU costs. Additionally, the ISDN ports include labor related costs associated with facility design. The costs for the DID trunk ports include costs for processing the service order, processing

the switch translations, and designing the facilities. DID terminations do not include RTU costs.

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR THE UNBUNDLED PORTS?

A. The nonrecurring cost study process for the unbundled ports is the same as the nonrecurring cost study process for the unbundled loops except the unbundled ports may include RTU costs. The RTU cost is calculated by first determining the RTU expense from vendor contracts. The RTU fees are vendor and switch type specific. Therefore, the individual fees are melded based on the percent deployment of network access lines per switch type. Then gross receipts tax is added to the melded number to determine a RTU cost per port installed.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND THE CENTRAL OFFICE CHANNEL INTERFACE?

A. The unbundled loop channelization system and central office channel interface is an arrangement offered to the ALEC for the purpose of channelizing multiple digital loop carrier 1.544 mbps channels on a non-concentrated or concentrated basis up to a maximum of 96 channels per system. These channels are available for connection to unbundled voice grade loops. The system includes the DSX-1 cross connect panel terminations for the DS1s and the digital loop carrier system hardwired equipment and common plug-ins.

The central office channel interface includes the working voice grade plug-in. Attachment DDC-6 depicts the items of plant included in these elements.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND CENTRAL OFFICE CHANNEL INTERFACE?

A. The recurring cost study process for the unbundled loop channelization system and central office channel interface includes the same generic cost study steps as those listed for the unbundled loops. Of course the network design determined in step 1 is for the unbundled loop channelization system and central office channel interface.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND CENTRAL OFFICE CHANNEL INTERFACE?

A. The nonrecurring costs for the unbundled loop channelization system and central office channel interface include three major categories of cost: (1) service order processing, (2) engineering, and (3) connect and test. The activities associated with these costs are similar to the activities listed for the unbundled loops. These unbundled elements are located in the BellSouth central office buildings. Therefore, technician travel time is not required.

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND THE CENTRAL OFFICE CHANNEL INTERFACE?

A. The nonrecurring cost study process for the unbundled loop channelization system and central office channel interface is identical to the nonrecurring cost study process for the unbundled loops.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN THE UNBUNDLED SPECIAL ACCESS VOICE GRADE SERVICE INTEROFFICE CHANNEL VOICE - UNBUNDLED EXCHANGE ACCESS?

A. The unbundled voice grade interoffice channel is an arrangement offered to ALECs for the purpose of providing a dedicated voice grade transmission path between two or more switching offices and a serving wire center of BellSouth. This is for connecting an unbundled exchange access loop to another central office that is not the central office of the end user. The arrangement includes a facility termination and a per mile element. The facility termination includes transmission equipment at both end offices of the circuit as well as the circuit equipment in the intermediate central offices through which the circuit passes. The per mile element includes aerial, buried, and underground fiber cable as well as the associated pole and conduit support investment.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR THE UNBUNDLED SPECIAL ACCESS VOICE GRADE SERVICE INTEROFFICE CHANNEL VOICE - UNBUNDLED EXCHANGE ACCESS?

A. The recurring cost study process for the unbundled voice grade interoffice channel includes the same generic cost study steps as those listed for the unbundled loops. Of course the network designs determined in step 1 are for the voice grade interoffice channel.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR THE UNBUNDLED SPECIAL ACCESS VOICE GRADE SERVICE INTEROFFICE CHANNEL VOICE - UNBUNDLED EXCHANGE ACCESS?

A. The nonrecurring costs for the unbundled voice grade interoffice channel include three major categories of cost: (1) service order processing, (2) engineering, and (3) connect and test. The activities associated with these costs are similar to the activities listed for the unbundled loops.

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR THE UNBUNDLED SPECIAL ACCESS VOICE GRADE SERVICE INTEROFFICE CHANNEL VOICE - UNBUNDLED EXCHANGE ACCESS?

A. The nonrecurring cost study process for the unbundled voice grade interoffice channel is identical to the nonrecurring cost study process for the unbundled loops.

Q. HOW WILL BELLSOUTH PROVIDE UNBUNDLED OPERATOR SERVICES AND DIRECTORY ASSISTANCE (DA)?

A. BellSouth will provide unbundled operator functions using the Company's existing Operator Services. Operator Services includes operator provided and fully automated call handling. Operator provided call handling includes 0+ and 0- calls. Fully automated call handling includes automated calling card, automated bill-to-third, and automated collect calls. Additionally, Operator Services includes busy line verification and emergency interrupt.

BellSouth will provide unbundled DA using the Company's existing Number Services. Number Services includes DA Access Service, DA Database Service and Direct Access to DA Service, DA Call Completion, and Directory Transport. Additionally, Number Services includes Number Intercept.

Q. HOW WILL BELLSOUTH PROVIDE UNBUNDLED COMMON CHANNEL SIGNALING?

A. BellSouth will provide unbundled Common Channel Signaling using its Common Channel Signaling/System Signaling 7 (CCS7) Signaling Transport Service. This service provides access to the Common Channel Signaling

network and transport of signaling messages used for call set-up and database query/response. The primary components of the network are Signal Transfer Points (STPs) and Signaling Links. The STPs are packet switches which route signaling messages through the network. The Signaling Links connect end and tandem office switches to the STPs, and the STPs to Service Control Points (SCPs). The SCPs are databases used for specific services such as Line Identification Database (LIDB) service.

CCS7 Signaling Transport Service includes the following cost elements:

- CCS7 Signaling Connection per 56 kbps Facility, per Month and Nonrecurring
- CCS7 Signaling Termination per STP Port, per Month
- CCS7 Signaling Usage, per Call Set-up Message and Per Transactions Capabilities Application Part (TCAP) Message
- CCS7 Signaling Usage Surrogate, per 56 kbps, per Month

Q. HOW WILL BELLSOUTH PROVIDE UNBUNDLED DATABASE SERVICES?

A. BellSouth will provide unbundled database services using the Company's existing Database Services utilizing the CCS7 platform. Unbundled Database Services includes the following:

- 800/POTS Number Delivery per Call
- 800/POTS Number Delivery with Optional Complex Features
- per Call

- LIDB Common Transport per Query
- LIDB Validation per Query
- Originating Point Code Establishment or Change

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR OPERATOR SERVICES AND DIRECTORY ASSISTANCE?

A. The cost study process follows the same generic steps for investment related recurring costs as previously discussed for unbundled loops. In addition to these investment related costs, software expenses have been quantified as well as operator labor costs. These costs are levelized over the period of 1996 through 1998. The levelized software expenses are amortized over five years to develop an equivalent annual cost. The labor cost is calculated on a cost per unit basis by using the average work time for a specific call type and multiplying by the appropriate labor rate. These costs are then segregated by volume sensitive and volume insensitive groupings. Unit LRIC are calculated for the volume sensitive costs. Unit TSLRIC are calculated including both the volume sensitive and volume insensitive costs.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR COMMON CHANNEL SIGNALING AND DATABASE SERVICES?

A. The cost study process follows the same generic steps for investment related recurring costs as previously discussed for unbundled loops. In addition to these investment related costs, non-investment related costs have been

quantified such as software expenses and lease payments for maintenance and administrative vendor services. These non-investment related costs are levelized over the period of 1996 to 1998. The levelized software expenses are amortized over five years to develop an equivalent annual cost. These costs are then segregated by volume sensitive and volume insensitive groupings. Unit LRIC are calculated for the volume sensitive costs. Unit TSLRIC are calculated including both the volume sensitive and volume insensitive costs.

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR OPERATOR SERVICES, DIRECTORY ASSISTANCE, COMMON CHANNEL SIGNALING, AND DATABASE SERVICES?

A. The cost study process follows the generic steps identified in Attachment DDC-3.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The long run incremental and total service long run incremental cost studies filed with my testimony in this proceeding determine the long run incremental costs specific to Florida for providing the following elements: unbundled loops, unbundled ports and associated local measured usage, unbundled loop channelization systems and central office channel interfaces, unbundled interoffice voice grade transport, operator services, directory assistance, common channel signaling, and database services. The cost studies include the costs directly incurred in provisioning these elements. BellSouth uses the

same cost study methodology for unbundled elements provided to ALECs and for services provided to end user customers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

SUPPLEMENTAL TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 23, 1996

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., N.E., Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. ("BellSouth").

Q. ARE YOU THE SAME D. DAONNE CALDWELL WHO PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?

A. My testimony provides information relative to the cost methodology specified in the FCC's First Report and Order in CC Docket No. 96-98 ("Order") released on August 8, 1996 and how that methodology compares to that used in the cost studies filed by BellSouth in this docket. I identify the differences in methodology that must be resolved in order to produce cost studies that

comply with the FCC's methodology, based on the presumption that the FCC's Order remains in effect as issued.

Q. THE FCC'S ORDER SPECIFIES A FORWARD LOOKING LONG RUN COST METHODOLOGY FOR ESTABLISHING INTERCONNECTION AND UNBUNDLED NETWORK ELEMENT RATES. IS THE FCC'S METHODOLOGY CONSISTENT WITH THE METHODOLOGY USED IN THE COST STUDIES THAT BELLSOUTH FILED IN THIS DOCKET?

A. BellSouth used a forward looking long run economic cost methodology. BellSouth's studies identified both the Long Run Incremental Cost (LRIC) and the Total Service Long Run Incremental Cost (TSLRIC), as appropriate, as ordered by the Commission. These studies included only the direct costs caused by providing the particular service or network element being studied. The LRIC appropriately establishes the price floor for the cost element studied.

The purpose of the cost methodology established by the FCC, Total Element Long Run Incremental Cost (TELRIC), is to set the rates for interconnection and unbundled network elements. All three methodologies are forward looking, long run and are based on the most efficient technology available. There are no common, shared or joint costs in BellSouth's LRIC or TSLRIC studies. TELRIC methodology, however, anticipates that many costs regarded as common or shared in BellSouth's LRIC and TSLRIC methodology would be included as directly attributable costs and the resultant smaller forward

looking common costs that cannot be attributed will be allocated among the cost elements.

Q. IN WHAT SPECIFIC AREAS DOES THE FCC METHODOLOGY DIFFER FROM THAT USED IN THE BELLSOUTH FILED COST STUDIES?

A. The FCC Order contained several requirements that will have a bearing on the previously filed cost studies. Some of the FCC specifications currently being analyzed include:

- Cost of Capital
- Depreciation
- Geographic Loop Deaveraging
- Direct Attribution of Forward Looking Joint and Common Costs
- Allocation of Forward Looking Joint and Common Costs

Q. WHAT DOES THE FCC ORDER STATE REGARDING COST OF CAPITAL?

A. The FCC Order states that TELRIC should include a cost of money element that results in "normal" profit. The FCC proposes the authorized FCC rate of return, 11.25% or a state authorized rate of return, as a reasonable starting point for cost of money in TELRIC calculations. The FCC Order also states that a TELRIC "will include a ... cost of capital that appropriately reflects the risks incurred by an investor" (paragraph 703) and that the "LECs bear the burden of demonstrating with specificity that the business risks that they face

in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital" (paragraph 702). BellSouth's studies use a long run forward-looking cost of money, 13.2%, which may be low considering the risk inherent in BellSouth's future.

Q. THE FCC ORDER STATES THAT TELRIC "WILL INCLUDE A DEPRECIATION RATE THAT REFLECTS THE TRUE CHANGES IN ECONOMIC VALUE OF AN ASSET..." (PARAGRAPH 703). IS THIS CONSISTENT WITH THE STUDIES FILED BY BELLSOUTH?

A. BellSouth's cost studies reflect the projected economic lives for new placements of facilities. These are the same economic lives as used in financial reporting for major plant accounts. As with cost of capital, the forward looking depreciation used in BellSouth's filed studies may warrant risk adjustment reflective of our new environment. As with cost of capital, the LECs must justify a risk-adjusted depreciation rate.

Q. WHAT DOES THE FCC ORDER SPECIFY WITH REGARD TO GEOGRAPHIC LOOP DEAVERAGING?

A. The FCC specifies geographic loop deaveraging into at least three geographic zones. BellSouth's unbundled loop cost studies were performed on a statewide average basis. BellSouth is looking at several alternatives that will enable the development of a reasonable approach to geographic loop deaveraging.

Q. WHAT COSTS OVER AND ABOVE THOSE INCLUDED IN BELLSOUTH'S STUDIES MUST BE STUDIED TO ADDRESS BOTH THE ATTRIBUTION AND ALLOCATION OF FORWARD LOOKING JOINT AND COMMON COSTS IN A TELRIC METHODOLOGY?

A. Once a determination can be made of the definition of forward looking joint and common costs, at a minimum the following areas of cost must be studied:

- Common overheads associated with maintenance and labor
- Various categories of support expenses and assets
- Corporate overhead expenses

Q. WHAT OTHER AREAS OF THE FCC'S ORDER MUST BE ADDRESSED TO DETERMINE WHETHER BELLSOUTH'S UNBUNDLED ELEMENT AND INTERCONNECTION COST STUDIES ARE IN COMPLIANCE?

A. FCC definitions of services and network elements must be fully evaluated to determine consistency. At a minimum, it is clear that the FCC's inclusion of vertical features with local switching is different from the service definition employed by BellSouth and has not been studied. Criteria and rate structure for geographic loop deaveraging must be determined.

Q. IF BELLSOUTH'S STUDIES ARE REVISED TO COMPLY WITH THE FCC GUIDELINES, WHAT IS THE ANTICIPATED IMPACT ON THE COST LEVELS?

A. Because the areas of difference vary in direction, e.g. change in cost of money would move cost levels downward but attribution and allocation of joint and common costs would move them upward, it is impossible to predict the overall result on the cost levels. However, it is anticipated that, overall, costs will increase.

Q. WHEN COULD REVISIONS TO COMPLY WITH FCC GUIDELINES TO THE STUDIES FILED IN THIS DOCKET BE COMPLETED?

A. A timeline for study revisions cannot be determined at this time. It would depend on how rapidly resolution can be reached on all outstanding questions, methodology can be developed, all necessary inputs can be gathered, and additional data sources can be found.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 30, 1996

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., N.E., Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. ("BellSouth").

Q. ARE YOU THE SAME D. DAONNE CALDWELL WHO FILED DIRECT AND SUPPLEMENTAL DIRECT TESTIMONY IN THIS DOCKET?

A. Yes. I filed direct testimony on behalf of BellSouth on August 12, 1996, and I filed supplemental direct testimony on August 23, 1996.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to address the positions regarding BellSouth's cost studies taken by AT&T witness Wayne Ellison in direct testimony in this proceeding.

Q. THROUGHOUT HIS TESTIMONY, MR. ELLISON ALLEGES THAT BELLSOUTH HAS NOT ADEQUATELY RESPONDED TO AT&T'S REQUEST FOR COST INFORMATION. IS THIS TRUE?

A. No. BellSouth has provided AT&T with over 250 cost studies in connection with the negotiations concerning local interconnection and unbundling. In addition to the cost studies themselves, AT&T has requested and received backup information relative to many of the studies. For example, backup for all the digital loop carrier and multiplexer files was provided for the loop cost study. This required several days work by a BellSouth cost analyst to track every input for AT&T from the number used in the LoopCost Model to the original inputs from BellSouth Network.

Additionally, BellSouth has participated in several face-to-face meetings and telephone discussions with AT&T, both to discuss AT&T's needs relative to cost studies and to explain the studies. AT&T submitted such a large volume of both written and verbal requests that BellSouth asked AT&T to prioritize the requests in order to best meet AT&T's needs. At the present time, BellSouth continues to receive and respond to new requests.

Q. ON PAGE 10 OF HIS TESTIMONY, MR. ELLISON DESCRIBES HOW AT&T ANALYZED BELLSOUTH'S COST STUDIES. DO YOU AGREE WITH HIS ANALYSIS?

A. No. AT&T's analysis consisted simply of making unfounded and unsupported assumptions that "significant problems" existed with the studies and using those unfounded and unsupported assumptions to make adjustments to the final costs. I would characterize this method of analysis as simply reducing the costs for the sole purpose of reducing the costs, by using inappropriate and unsupported adjustments. Mr. Ellison makes several inappropriate assumptions and adjustments to BellSouth's cost studies in general. I will discuss them first. I will also discuss inappropriate assumptions and adjustments Mr. Ellison makes concerning specific BellSouth cost studies.

GENERAL INAPPROPRIATE ASSUMPTIONS AND ADJUSTMENTS

Q. ON PAGE 13, LINE 24 OF HIS DIRECT TESTIMONY, MR. ELLISON STATES THAT BELLSOUTH'S COST STUDIES "INCLUDE RETURN ON EQUITY ASSUMPTIONS OF UP TO 17 OR 18 %." IS HE CORRECT?

A. No. In fact, BellSouth uses a 13.2% cost of money in its cost studies, which is based on a return on equity of 16% and a cost of debt of 8.9%. Mr. Ellison arbitrarily decides that 11.5% is a reasonable equity return; however, he provides no support for his assumption and, in fact, he cannot support his assumption. Indeed, prior to the passage of price regulation, in Florida, BellSouth was

authorized by this Commission, under incentive regulation, to earn a minimum of 12.5% return on equity with no sharing and a maximum of 17.5% with a provision for sharing a portion of the earnings.

Q. EXPLAIN HOW MR. ELLISON'S DIRECT TESTIMONY REFLECTS AT&T'S INAPPROPRIATE USE OF BELLSOUTH'S COST STUDIES?

A. AT&T used the BellSouth cost studies which were service or network element specific to dissagregate the costs for sub-elements. If AT&T was unable to so disaggregate, Mr. Ellison complains that the costs could not be disaggregated into costs for sub-elements. AT&T's use of the BellSouth cost studies in this manner was inappropriate in the following respects:

(1) On page 16 of his direct testimony, Mr. Ellison complains that BellSouth did not provide cost information for each sub-loop component. Even if such cost information could be developed, it would not be relevant because sub-loop unbundling is not technically feasible. This issue is discussed in Mr. Milner's direct testimony.

(2) On page 18 of his direct testimony, Mr. Ellison complains that "It has been necessary for AT&T to interpret and restructure BellSouth's cost estimates to obtain unbundled costs for the local switch as a stand-alone unbundled element." He claims that "This step has been necessary because BellSouth aggregated its study results to include both local switch costs and costs associated with the separate transport element." As discussed in Mr. Scheye's direct testimony,

unbundled local switching includes the line termination, end office switching and local transport. Therefore, the BellSouth cost studies appropriately aggregate the local switching cost and the transport cost.

3) AT&T uses studies performed by BellSouth earlier than those provided in this docket and makes comparisons that are not relevant to this proceeding. The "initial" loop study to which Mr. Ellison refers on page 13 of his direct testimony is superseded by the unbundled loop studies filed in this docket. The unbundled loop studies provided in this docket contain the most recent information available and, therefore, are the only studies that should be considered. In some cases, Mr. Ellison compares studies that are not even for the same service. For instance, the local measured usage cost studies associated with the unbundled ports, which appropriately identify costs for local usage rating and billing, are the only usage cost studies that are included in this docket. However, on pages 18 & 19 of this direct testimony, Mr. Ellison compares these local usage cost studies to a cost study for usage associated with a totally different type of service.

(4) AT&T inappropriately relies on cost studies performed for other BellSouth states without support for whether those states incur costs similar to those for Florida.

INAPPROPRIATE ASSUMPTIONS AND ADJUSTMENTS CONCERNING SPECIFIC COST STUDIES

I. UNBUNDLED LOOPS

Q. ON PAGES 11 THROUGH 15 OF HIS DIRECT TESTIMONY, MR. ELLISON MAINTAINS THAT BELLSOUTH'S 2-WIRE ANALOG, 4-WIRE ANALOG, AND 2-WIRE ISDN DIGITAL UNBUNDLED LOOP STUDIES DO NOT REFLECT LEAST COST, FORWARD LOOKING TECHNOLOGIES. IS HE CORRECT?

A. No. BellSouth's cost studies for 2-wire analog, 4-wire analog and 2-wire ISDN unbundled loops include copper and digital loop carrier on fiber as deployment technologies. Copper and digital loop carrier on fiber represent the most efficient forward looking technologies for deploying voice grade (2-wire and 4-wire) and 2-wire ISDN unbundled loops now and in the future. The network is not designed for a particular service; it is designed on the most efficient and economical technologies for the network as a whole, considering all services provided. Copper cable is the most efficient means of providing service for the whole network up to an economically determined point. Beyond this point, digital loop carrier on fiber becomes more economical. BellSouth deploys several types of digital loop carrier systems based on the most economical system for the density of the area served. When the density of the area makes it economically feasible, BellSouth deploys systems that combine the multiplexer and digital loop carrier equipment in a single unit, further reducing the cost.

Q. ON PAGE 12 OF HIS DIRECT TESTIMONY, MR. ELLISON STATES THAT BELLSOUTH INCLUDES "INAPPROPRIATE COSTS" IN THE 2-WIRE ANALOG UNBUNDLED LOOP STUDY BY ASSUMING THAT LOOPS

PROVIDED OVER DIGITAL LOOP CARRIER WOULD BE CONVERTED TO ANALOG FORMAT AT THE WIRE CENTER. IS THAT TRUE?

A. No. All the costs included in the unbundled loop cost studies are appropriate. In particular, since the analog (2-wire and 4-wire) loops must be provided to the Alternate Local Exchange Company (ALEC) at the analog voice grade level, a central office terminal is required to convert the incoming digital DS1s to analog. The central office terminal is also required to segregate the individual voice grade circuits in the incoming bitstream when the loop is served via digital loop carrier. When the ISDN circuit is served via digital loop carrier, the circuit remains a 2B+D ISDN (digital format) circuit. However, the central office terminal is required in order to segregate the individual ISDN circuits in the incoming bitstream.

Q. ON PAGE 13 OF HIS DIRECT TESTIMONY, MR. ELLISON ASSERTS THAT BELLSOUTH USES INCORRECT DIGITAL LOOP CARRIER TECHNOLOGY IN THE 2-WIRE LOOP STUDIES. IS THIS TRUE?

A. No. First of all, Mr. Ellison provides no support for this assertion, and, in fact, he cannot. The digital loop carrier technologies that BellSouth uses in the Florida 2-wire analog loop study filed with my testimony on August 12, 1996 represent the most forward looking technologies based on the densities of the areas where the equipment is being placed. BellSouth uses multiple vendors for digital loop carrier equipment to avoid becoming dependent on any particular type of

equipment or any single vendor. Investments are developed from material prices based on BellSouth's negotiated contracts with these vendors.

Q. ON PAGE 15 OF THIS DIRECT TESTIMONY, MR. ELLISON STATES THAT THE "COMMISSION SHOULD ALSO REJECT" BELLSOUTH'S BASIC RATE INTERFACE ISDN (BRI ISDN) LOOP STUDIES. DO YOU AGREE?

A. No. Mr. Ellison's reasons for asking that these studies be rejected are invalid. His first assertion is that the BellSouth ISDN loop studies do not reflect the most efficient technologies. He is incorrect. As previously discussed in this testimony, the network is designed to be efficient for all services offered rather than for any particular service. Therefore, the technologies studied for ISDN service are appropriate. His second assertion is that the cost studies reflect "the same inefficient analog conversion included in BellSouth's 2 and 4-wire studies." First of all, BellSouth does not convert the ISDN signal to an analog signal. The necessity for the central office terminal used in provisioning unbundled ISDN loops is addressed earlier in this testimony. Mr. Ellison's third assertion, that an inappropriate cost of money is used in the study, is also incorrect and has been previously addressed in this testimony.

II. OPERATOR SERVICES

Q. ON PAGE 19 OF HIS DIRECT TESTIMONY, MR. ELLISON STATES THAT "AT&T ADJUSTED BELLSOUTH'S COSTS DOWNWARD BY A FACTOR OF 10% TO REFLECT THE POSSIBILITY OF INAPPROPRIATE COST LOADINGS". DO YOU AGREE WITH THIS?

A. No. Mr. Ellison provides no support for the 10% factor used to downward adjust the costs. He is simply speculating, as evidenced by his term "possibility of inappropriate cost loadings." Mr. Ellison cites no facts as to which cost loadings he finds inappropriate, nor does he address any inappropriate application of the loading factors. There is, in fact, no support for this action other than the fact that AT&T wants to lower the cost. Operator Services cost studies were filed with my testimony on August 12, 1996, and the costs presented in these studies are valid.

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Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. BellSouth provided AT&T with more than 250 cost studies from various states for numerous services and elements from unbundled loops to Operator Services. In his direct testimony, Mr. Ellison presented his analysis of the BellSouth cost studies. Various statements in his direct testimony imply that the BellSouth cost studies are not accurate. However, he does not support these statements. Rather

than analyzing the studies, he made what he refers to as "adjustments". The overall impact of Mr. Ellison's flawed analysis is to produce lower costs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960846-TP

SEPTEMBER 9, 1996

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., NE, Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. (hereinafter referred to as "BellSouth" or "the Company"). My area of responsibility relates to economic service costs.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I attended the University of Mississippi, graduating with a Master of Science Degree in mathematics. I have attended numerous Bell Communications Research, Inc. (Bellcore) courses and outside seminars relating to service cost studies and economic principles.

My initial employment was with South Central Bell in 1976 in the Tupelo, Mississippi, Engineering Department where I was responsible for Outside Plant Planning. In 1983, I transferred to BellSouth Services, Inc. in Birmingham, Alabama, and was responsible for the Centralized Results System Database. I

moved to the Pricing and Economics Department in 1984 where I developed methodology for service cost studies until 1986 when I accepted a rotational assignment with Bell Communications Research, Inc. While at Bellcore, I was responsible for development and instruction of the Service Cost Studies Curriculum including courses such as "Concepts of Service Cost Studies", "Network Service Costs", "Nonrecurring Costs", and "Cost Studies for New Technologies". In 1990, I returned to BellSouth and was appointed to a position in the cost organization, which is now a part of the Finance Department, with the responsibility of managing the development of cost studies for transport facilities, both loop and interoffice.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the cost methodology used in the Long Run Incremental Cost (LRIC) and Total Service Long Run Incremental Cost (TSLRIC) studies for the unbundled network elements that BellSouth will provide to the Alternative Local Exchange Companies (ALECs) in Florida. Specifically, I will address the cost studies for the following network elements:

- Unbundled Loops (2-Wire Analog, 4-Wire Analog and 2-Wire ISDN Digital)
- Unbundled Ports and Associated Local Usage
- Unbundled Loop Channelization Systems and Central Office Channel Interfaces (located in the BellSouth central office buildings)
- Special Access Voice Grade Service Interoffice Channel Voice - Unbundled Exchange Access

- Operator Services
- Directory Assistance
- Common Channel Signaling
- Database Services

The cost studies include all the volume sensitive and volume insensitive long run incremental costs associated with the provision of these unbundled elements.

Since the cost issues raised in MCI's petition for arbitration have been previously addressed in earlier testimony, I would like to adopt by reference my Direct Testimony filed August 12, 1996, in Florida Docket No. 960833-TP which included the cost studies (Exhibits DDC-7 through DDC-22) for the afore-mentioned unbundled network elements.

Q. DO YOU HAVE ANYTHING TO ADD TO YOUR TESTIMONY?

A. Yes. The cost studies provided by BellSouth are based on a forward looking long run economic cost methodology. BellSouth's cost studies identify both the Long Run Incremental Costs and the Total Service Long Run Incremental Costs as appropriate. These studies include only the direct costs caused by providing the particular network element being studied.

The purpose of the cost methodology established by the FCC's First Report and Order in CC Docket 96-98 (FCC Order) released August 8, 1996, is to set the rates for interconnection and unbundled network elements. The basis for a Total Element Long Run Incremental Cost (TELRIC) study is also a forward looking

long run economic cost methodology. However, TELRIC methodology anticipates pricing of elements in a wholesale network company; hence, many costs regarded as common or shared and, therefore, excluded from BellSouth's LRIC and TSLRIC methodology would be included as directly attributable in a TELRIC study. The FCC pricing methodology also specifies that, over and above TELRIC, the additional portion of forward looking common costs that cannot be directly attributed to any particular network element will be allocated among the cost elements.

BellSouth is currently developing the methodology to support TELRIC studies. As soon as TELRIC studies are completed, they will be provided. The initial TELRIC studies that BellSouth will provide will be representative of a statewide average. BellSouth is currently looking at several alternatives that will enable the development of a reasonable approach to geographic deaveraging of the costs. Once the methodology is determined, geographically deaveraged TELRIC studies will be produced and provided.

By definition, TELRIC results should be higher than the LRIC/TSLRIC results. For example:

- BellSouth's LRIC/TSLRIC studies do not include any shared or common costs that would be considered directly attributable using the TELRIC methodology specified in the FCC Order and

- BellSouth's LRIC/TSLRIC studies do not include an allocation of forward looking common costs that cannot be directly attributed to any particular network element.

It would be inappropriate to set rates below the costs identified by these LRIC/TSLRIC studies. Until TELRIC studies are available, the Commission should use BellSouth's LRIC/TSLRIC results as the price floor for establishing rates for unbundled network elements.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960916-TP

SEPTEMBER 9, 1996

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., N.E., Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. (hereinafter referred to as "BellSouth" or "the Company"). My area of responsibility relates to economic service costs.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I attended the University of Mississippi, graduating with a Master of Science Degree in mathematics. I have attended numerous Bell Communications Research, Inc. (Bellcore) courses and outside seminars relating to service cost studies and economic principles.

My initial employment was with South Central Bell in 1976 in the Tupelo, Mississippi, Engineering Department where I was responsible for Outside Plant Planning. In 1983, I transferred to BellSouth Services, Inc. in Birmingham,

Alabama, and was responsible for the Centralized Results System Database. I moved to the Pricing and Economics Department in 1984 where I developed methodology for service cost studies until 1986 when I accepted a rotational assignment with Bell Communications Research, Inc. While at Bellcore, I was responsible for development and instruction of the Service Cost Studies Curriculum including courses such as "Concepts of Service Cost Studies", "Network Service Costs", "Nonrecurring Costs", and "Cost Studies for New Technologies". In 1990, I returned to BellSouth and was appointed to a position in the cost organization, which is now a part of the Finance Department, with the responsibility of managing the development of cost studies for transport facilities, both loop and interoffice.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the cost methodology used in the Long Run Incremental Cost (LRIC) and Total Service Long Run Incremental Cost (TSLRIC) studies for the following unbundled network elements that BellSouth will provide to the Alternative Local Exchange Companies (ALECs) in Florida:

- Unbundled Loops (2-Wire Analog, 4-Wire Analog and 2-Wire ISDN Digital)
- Unbundled Loop Channelization Systems and Central Office Channel Interfaces (located in the BellSouth central office buildings)

The cost studies include all the volume sensitive and volume insensitive long run incremental costs associated with the provisioning of these unbundled elements.

The cost studies, have been previously furnished to ACSI in response to ACSI's First Request for Documents Items 3a-c and 5. This document request was filed with the Florida Public Service Commission ("FPSC" or "Commission") and served on ACSI on September 3, 1996. The cost studies were filed with the FPSC as Exhibits (DDC-7 and DDC-8) to my Direct Testimony filed on August 12, 1996.

Q. ARE YOU PROVIDING COST SUPPORT FOR THE LOOP CROSS-CONNECT, THE 2-WIRE ASYMMETRICAL DIGITAL SUBSCRIBER LINE (ADSL), THE 2-WIRE HIGH-BIT-RATE DIGITAL SUBSCRIBER LINE (HDSL) AND THE 4-WIRE HDSL LOOPS?

A. Not at this time. The LRIC/TSLRIC cost study for the loop cross-connect is nearing completion and will be filed at a later date. The technical specifications for the ADSL and HDSL loops are not finalized. When those specifications are determined, cost studies will be developed and provided.

Q. WHAT COST METHODOLOGY IS USED IN THE COST STUDIES FOR UNBUNDLED ELEMENTS?

A. Incremental costing techniques are used to identify the incremental costs associated with providing these elements. Incremental costs are based on cost causation and include all of the costs directly caused by expanding production, or alternatively, costs that would be saved if the production levels were reduced. The production unit could be an entire service or a unit of a service. Costs may be

volume sensitive and/or volume insensitive. Long run incremental cost studies assume that production capacity is adjusted to meet demand; hence, only forward looking costs affected by the business decision being studied are included.

Q. DO THE LRIC AND TSLRIC STUDIES FOR THE UNBUNDLED ELEMENTS INCLUDE SHARED OR COMMON COSTS?

A. No. The LRIC and TSLRIC studies do not include shared or common costs because, by definition, shared and common costs are not causally related to specific elements. The LRIC studies for the unbundled elements include only the volume sensitive long run incremental costs associated with providing these elements. The TSLRIC studies include volume insensitive long run incremental costs in addition to the LRIC.

Q. HOW DO THE COST STUDIES FILED WITH YOUR TESTIMONY RELATE TO THE FCC'S FIRST REPORT AND ORDER IN CC DOCKET 96-98 (FCC ORDER) RELEASED AUGUST 8, 1996?

A. BellSouth uses a forward looking long run economic cost methodology. BellSouth's cost studies identify both the Long Run Incremental Costs and the Total Service Long Run Incremental Costs as appropriate. These studies include only the direct costs caused by providing the particular network element being studied.

The purpose of the cost methodology established by the FCC Order, Total Element Long Run Incremental Cost (TELRIC), is to set the rates for interconnection and unbundled network elements. The basis for a TELRIC study is also a forward looking long run economic cost methodology. However, TELRIC methodology anticipates pricing of elements in a wholesale network company; hence, many costs regarded as common or shared and, therefore, excluded from BellSouth's LRIC and TSLRIC methodology would be included as directly attributable in a TELRIC study. The FCC pricing methodology also specifies that, over and above TELRIC, the additional portion of forward looking common costs that cannot be directly attributed to any particular network element will be allocated among the cost elements.

Q. IS BELLSOUTH DEVELOPING ANY TELRIC STUDIES FOR UNBUNDLED NETWORK ELEMENTS?

A. Yes. BellSouth is currently developing the methodology to support TELRIC studies. As soon as TELRIC studies are completed, they will be provided.

Q. WHEN TELRIC STUDIES ARE PROVIDED, WILL THEY PRODUCE GEOGRAPHICALLY DEAVERAGED COSTS?

A. The initial TELRIC studies that BellSouth will provide will be representative of a statewide average. BellSouth is currently looking at several alternatives that will enable the development of a reasonable approach to geographic deaveraging of the

costs. Once the methodology is determined, geographically deaveraged TELRIC studies will be produced and provided.

Q. DO YOU EXPECT TELRIC RESULTS TO PRODUCE HIGHER OR LOWER COSTS THAN THE LRIC/TSLRIC RESULTS FILED WITH YOUR TESTIMONY?

A. By definition, TELRIC results should be higher than the LRIC/TSLRIC results. For example:

- BellSouth's LRIC/TSLRIC studies do not include any shared or common costs that would be considered directly attributable using the TELRIC methodology specified in the FCC Order and
- BellSouth's LRIC/TSLRIC studies do not include an allocation of forward looking common costs that cannot be directly attributed to any particular network element.

Q. IN THE ABSENCE OF TELRIC STUDIES, WHAT CONCLUSIONS CAN BE DRAWN BASED UPON THE LRIC/TSLRIC STUDIES FILED WITH YOUR TESTIMONY?

A. Since, by definition, TELRIC results should be higher than LRIC/TSLRIC results, it would be inappropriate to set rates below the costs identified by these LRIC/TSLRIC studies. Until TELRIC studies are available, the Commission should use BellSouth's LRIC/TSLRIC results as the price floor for establishing rates for unbundled network elements.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN EACH OF THE THREE TYPES OF UNBUNDLED LOOPS (2-WIRE ANALOG VOICE GRADE, 4-WIRE ANALOG VOICE GRADE AND 2-WIRE ISDN DIGITAL GRADE)?

A. The unbundled loop is the facility used to connect an ALEC's customer premises with the BellSouth central office. The voice grade and ISDN unbundled loops begin at a connection on the Main Distributing Frame in the BellSouth central office. At the ALEC's customer premises, the loop includes the cabling up to and including the network interface. All outside plant components of the network utilized between the central office and the ALEC's customer premises are included. The network components include copper cables, poles, conduit, fiber optic cables, and multiplexing equipment. Exhibit DDC-1 attached to my testimony depicts the basic architecture for each of the three unbundled loops.

Q. WHAT TECHNOLOGIES ARE INCLUDED IN THE UNBUNDLED LOOP COST STUDIES?

A. The technologies differ depending on the type of loop being provisioned. The voice grade and ISDN unbundled loop studies analyze two technologies: copper and digital loop carrier on fiber. Copper and digital loop carrier on fiber represent forward looking technologies and the most efficient method of deploying voice grade (2-wire and 4-wire) and 2-wire ISDN unbundled loops now and in the future.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR UNBUNDLED LOOPS?

A. The generic steps involved in developing recurring costs for unbundled loops are listed below. Each of the three unbundled loops is studied separately and the unique characteristics of each, such as transmission level and loop length, are taken into consideration. Exhibit DDC-2 attached to my testimony provides a flowchart depicting the specific steps for developing the recurring costs for the unbundled 2-wire analog voice grade loop.

Step 1: Determine the network designs (architectures) which will be used to deploy the loop. (Loop sample data is gathered for the voice grade and ISDN loops).

Step 2: Determine material prices and/or investments for the items of plant used in each design and/or each loop sample. Material prices are obtained from BellSouth contracts with various vendors.

Step 3: Apply in-plant factors and telephone plant indices as appropriate to determine base year investments. In-plant factors are applied to material prices in order to convert the material price to an installed investment which includes the cost of material, engineering labor and installation labor. Telephone plant indices estimate the changes in material price and/or installed investment over time.

Step 4: Adjust the investments for utilization to account for spare capacity. Spare capacity is required for maintenance and growth.

Step 5: Apply investment inflation factors to the investments to convert the utilized base year investments to investments representative of a three year planning period.

Step 6: Apply loading factors to the investments to determine investments for miscellaneous common equipment and power, land, buildings, poles and conduit as appropriate.

Step 7: Weight the investments to determine an average investment for a typical loop and add the results to determine an investment by plant account for the service. The investment for each loop in the loop sample is calculated and then an average loop investment is determined for the voice grade and ISDN unbundled loops.

Step 8: Convert the investments by plant account to annual costs by applying account specific annual cost factors to the various investments. Add the annual costs for the various accounts and then divide by 12 to determine a total monthly cost for the service.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR EACH TYPE OF UNBUNDLED LOOP?

A. Nonrecurring costs for the unbundled loops are the one time costs associated with provisioning, installing, and disconnecting the unbundled loops. These costs include four major categories of activity: service order processing, engineering, connect and test, and technician travel time. Examples of the work activities in each of these categories are as follows:

- Service order processing -

Prepare and issue service order

- Engineering -

  Assign cable and pair; Design circuit; Order plug-in

- Connect and Test -

  Install circuit; Test circuit

- Technician Travel Time -

  Travel to the ALEC's customer premises

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR ALL THREE TYPES OF UNBUNDLED LOOPS?

A. The generic process for developing the nonrecurring costs for unbundled loops is as follows:

Step 1: Determine the cost elements to be developed.

Step 2: Define the work functions.

Step 3: Establish work flows.

Step 4: Determine work times for each work function.

Step 5: Develop directly assigned labor costs for each work function (labor rate x work time).

Step 6: Accumulate work function costs to determine the total nonrecurring costs for each cost element.

Exhibit DDC-3 attached to my testimony provides a flowchart depicting the nonrecurring cost development.

Q. WHAT NETWORK COMPONENTS ARE INCLUDED IN THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND THE CENTRAL OFFICE CHANNEL INTERFACE?

A. The unbundled loop channelization system and central office channel interface is an arrangement offered to the ALEC for the purpose of channelizing multiple digital loop carrier 1.544 mbps channels on a non-concentrated or concentrated basis up to a maximum of 96 channels per system. These channels are available for connection to unbundled voice grade loops. The system includes the DSX-1 cross connect panel terminations for the DS1s and the digital loop carrier system hardwired equipment and common plug-ins. The central office channel interface includes the working voice grade plug-in. Exhibit DDC-4 attached to my testimony depicts the items of plant included in these elements.

Q. WHAT IS THE RECURRING COST STUDY PROCESS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND CENTRAL OFFICE CHANNEL INTERFACE?

A. The recurring cost study process for the unbundled loop channelization system and central office channel interface includes the same generic cost study steps as those listed for the unbundled loops. Of course, the network design determined in Step 1 is for the unbundled loop channelization system and central office channel interface.

Q. WHAT IS INCLUDED IN THE NONRECURRING COSTS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND CENTRAL OFFICE CHANNEL INTERFACE?

A. The nonrecurring costs for the unbundled loop channelization system and central office channel interface include three major categories of cost: (1) service order processing, (2) engineering, and (3) connect and test. The activities associated with these costs are similar to the activities listed for the unbundled loops. These unbundled elements are located in the BellSouth central office building; therefore, technician travel time is not required.

Q. WHAT IS THE NONRECURRING COST STUDY PROCESS FOR THE UNBUNDLED LOOP CHANNELIZATION SYSTEM AND THE CENTRAL OFFICE CHANNEL INTERFACE?

A. The nonrecurring cost study process for the unbundled loop channelization system and central office channel interface is identical to the nonrecurring cost study process for the unbundled loops.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Long Run Incremental Cost and Total Service Long Run Incremental Cost studies filed with my testimony in this proceeding determine the volume sensitive and volume insensitive costs that are incurred specific to Florida for providing unbundled loops, unbundled loop channelization systems and central office

channel interfaces. The cost studies include only the costs directly incurred in provisioning these elements and do not include any allocation of shared and common costs. Until TELRIC studies are available, the Commission should use BellSouth's LRIC/TSLRIC results as the price floor for establishing rates for unbundled network elements.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960916-TP

SEPTEMBER 16, 1996

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC.

A. My name is D. Daonne Caldwell. My business address is 675 W. Peachtree St., N.E., Atlanta, Georgia. I am a manager in the Finance Department of BellSouth Telecommunications, Inc. ("BellSouth").

Q. ARE YOU THE SAME D. DAONNE CALDWELL WHO PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes. I filed direct testimony on behalf of BellSouth on September 9, 1996.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to address the positions regarding charges for unbundled network elements and how they reflect BellSouth's costs taken by ACSI witnesses C. William Stipe, III, Dr. Marvin H. Kahn, and Mr. Richard Robertson in direct testimony in this proceeding.

Q. ON PAGE 30 OF HIS DIRECT TESTIMONY, DR. KAHN ASSERTS THAT THE NONRECURRING CHARGES BELLSOUTH CHARGES AN ALEC FOR ESTABLISHING SERVICE (UNBUNDLED LOOPS) SHOULD BE THE SAME AS BELLSOUTH'S NONRECURRING CHARGES APPLICABLE TO AN END USER FOR ESTABLISHING SERVICE. DO YOU AGREE?

A. No. As Mr. Scheye points out in his direct testimony in this proceeding, BellSouth's proposed nonrecurring charges for unbundled loops are only slightly above the nonrecurring costs. The nonrecurring costs for each of the unbundled elements were filed with my direct testimony in this proceeding. The cost study documentation includes a list of work centers involved in provisioning the unbundled loops, as well as the work time required in each center and the cost for each center. These nonrecurring costs are specific to establishing service (unbundled loop) for an ALEC's customer. Dr. Kahn even admits in his testimony on pages 30 and 31 that the LEC should be able to recover the costs associated with the activities required to establish service.

There are several activities required to provision an unbundled loop for a new customer. Some of the activities significantly impact the cost to BellSouth, and are included in the filed cost study. Examples of these activities include the following:

- The Circuit Design Group designs the unbundled loop and issues a DLR to the ALEC indicating the basic design information on the DLR and the hand-off interface.

- Field work groups (1) ensure all plug-ins are placed into the appropriate slots and are properly optioned; (2) ensure dial tone is available to the ALEC switch; (3) travel to the customer's premises to tag/label the unbundled loop circuit with the circuit identifier and perform the required frequency tests; and (4) connect the loop in the central office to the transport to the ALEC's switch.

Q. ON PAGE 31 OF HIS DIRECT TESTIMONY, DR. KAHN ASSERTS THAT THE ONLY ACTIVITY REQUIRED TO SWITCH A BELLSOUTH END USER TO AN ACSI NODE IS CHANGING A CROSS-CONNECT. MR. STIPE MAKES THE SAME ASSERTION ON PAGE 3 OF HIS DIRECT TESTIMONY. IS THIS TRUE?

A. No. Again, there are several activities required to switch a BellSouth exchange service customer to ACSI. Examples of these activities that significantly impact the cost to BellSouth are as follows:

- The service order processing activity includes reviewing the request to determine if Remote Call Forwarding (RCF) is required. If RCF is required, then the service request is forwarded to the Local Carrier Service Center where the RCF orders are issued.
- In order for the ALEC to use the existing loop, the existing loop must not be on integrated digital loop carrier and the loop must meet the design parameters of the unbundled loop request. If for any reason the existing loop cannot be used, the assignment process becomes manual and another loop is sought that meets the basic requirements of the service request.

- The Circuit Design Group designs the unbundled loop and issues a Design Layout Record (DLR) to the ALEC indicating the basic design information on the DLR and the hand-off interface.
- Field work groups verify dial tone is available to the ALEC switch and travel to the customer's premises to tag/label the unbundled loop circuit with the new circuit identifier.

Q. ON PAGE 32 OF HIS TESTIMONY, DR. KAHN STATES THAT "ILECS OFTEN INCLUDE THE COSTS OF SALES AND MARKETING ACTIVITIES WHICH ARE NOT DIRECTLY ATTRIBUTABLE TO ESTABLISHING SERVICE" IN THE NONRECURRING COSTS FOR UNBUNDLED NETWORK ELEMENTS. DOES BELLSOUTH INCLUDE COSTS OF SALES AND MARKETING ACTIVITIES WHICH ARE NOT DIRECTLY ATTRIBUTABLE TO ESTABLISHING SERVICE IN THE NONRECURRING COSTS FOR UNBUNDLED NETWORK ELEMENTS?

A. No. BellSouth does not include the costs of sales and marketing activities which are not directly attributable to establishing service in the nonrecurring costs for unbundled network elements. BellSouth does include the service order processing costs. These costs are a direct result of offering the unbundled element and are the costs of handling the customer's request and establishing the customer's record. Costs for marketing value-added services are not included in the nonrecurring costs for any of the unbundled elements.

Q. IN HIS DIRECT TESTIMONY, MR. STIPE DISCUSSES THE PHYSICAL CHARACTERISTICS OF SPECIAL ACCESS SERVICE AND IMPLIES THAT THE UNBUNDLED LOOP BELLSOUTH IS PROVIDING INCLUDES TRANSMISSION REQUIREMENTS AND, THEREFORE, COSTS THAT ARE NOT NECESSARY TO PROVIDE ANALOG SERVICE. ADDITIONALLY, IN HIS DIRECT TESTIMONY ON PAGE 17, MR. ROBERTSON STATES THAT "BELLSOUTH PROPOSES TO PROVIDE 56 KB/S DIGITAL SPECIAL ACCESS AS ITS 'UNBUNDLED LOOP.'" IS THIS TRUE?

A. No. The 2-wire analog loop that BellSouth will provide to an ALEC is a 56 kbps analog loop, and the cost study for this loop includes the most efficient and cost effective technologies for providing voice grade service. In fact, the technologies BellSouth studied for the unbundled loops are identical to the technologies BellSouth studies when performing cost studies for any voice grade exchange service BellSouth offers to end users. The most cost efficient method of providing voice grade service is copper when the circuit length from the central office is 12 kilofeet or less. If the circuit exceeds 12 kilofeet in total length, the most efficient method of providing voice grade service is digital loop carrier on fiber. A voice grade Plain Old Telephone Service (POTS) plug-in is used in the digital loop carrier systems, not a digital data plug-in as Mr. Stipe implies. The unbundled 2-wire and 4-wire analog cost studies filed with my direct testimony on September 9, 1996, include the cost effective technologies I have just outlined.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Q (By Mr. Lackey) Do you have a summary of your testimony?

A Yes, sir, I do.

Q That you can do better than my questions? Would you please give it?

A Yes, sir. Good morning. My name is Daonne Caldwell, and I work in the cost organization that provides cost studies for BellSouth Telecommunications, Inc. I'm here today to sponsor the cost studies that BellSouth has performed to support the rates we propose for unbundled network elements that will be offered to alternative local exchange companies in the state of Florida.

We all know that this is a very significant occasion and those cost studies will play a major role in the Commission's ultimate decision. It may come as a surprise to some, but for more than a decade BellSouth has developed costs based on forward-looking incremental cost methodology.

While each of our cost studies follows an established methodology, I am going to address the local loop cost study, since the loop is a very important network element and one that has generated much interest. In order to develop a meaningful local loop cost study, it is necessary to model an efficient

network.

Opposing parties will have you believe that it is not necessary to analyze the existing network as a starting point; however, they are wrong. The customers are where they are and the central offices are where they are. BellSouth's long run incremental cost studies overlays forward-looking technology on the existing infrastructure, including both the location of existing central offices, and the network facilities which will be currently and in the future serving our customers.

As I'm sure you know, BellSouth serves more than 3.8 million residence lines and over 1.3 million business lines in Florida. Some parties have suggested that we should begin our loop studies by identifying every loop we have. It would be extremely labor intensive to stress -- excuse me -- to trace out the physical makeup of each one of these loops; and, in fact, that exercise is totally unnecessary since we used a statistical sample to produce the same end results.

I should note that I am not a statistician, but then neither am I a person who purchases our copper. My point is that we have specialists who all work together to produce our cost studies. Our

statisticians have carefully examined our sample of loops to ensure that we have the proper number to validate our study.

While loop sample makeups provide much useful information regarding the cost of loops, BellSouth did not simply determine the cost of loops in the existing network. Rather, BellSouth's local loop cost study redesigned each sample in order to reflect the forward-looking most efficient technology.

Loops less than 12 kilofeet in total length were assumed to be served over 26-gauge copper cable, and loops greater than 12 kilofeet were assumed to be served via digital loop carrier over a fiber network.

We used the existing customers' demographics in Florida to make BellSouth cost studies representative of forward-looking incremental costs in Florida. We have routinely and normally followed these procedures in our region.

On August the 8th of 1996 the FCC released an order proposing a methodology for the pricing of local interconnection and unbundled elements. The FCC's pricing methodology builds up on the long run incremental costs that I have just described. Indeed, the FCC coined a new phrase, "total element long run incremental cost, TELRIC.

A TELRIC study produces the cost of a network element rather than a telecommunications service. I should also note that when you add a service's volume sensitive cost to its nonvolume sensitive cost, you have what we normally called a TS, or total service, long run incremental cost study.

When you apply the same basic concepts to an element instead of a service, you get close to what the FCC calls a TELRIC study, but you have to make one adjustment. Specifically, the FCC recognized that certain costs might not be direct to a particular service, but might be a directly attributable cost of a network element, such as a local loop; for example, the salary of a planning engineer whose job is to analyze the outside plant network and plant cable relief jobs which would not be included in any service-specific cost study, because that engineer designs the networks for all types of services. Therefore, his or her time would be treated as a shared cost in our normal service-specific incremental cost studies.

However, when performing a study that will produce the cost of any local loop, that planning engineer becomes a directly attributable cost of the local network loop element. Therefore, we have added

these directly attributable costs which we can identify as being associated with a specific network element to our results obtained using our basic incremental cost methodology.

The FCC determined that it would be appropriate to base prices for unbundled network elements on TELRIC plus a reasonable share of forward-looking joint and common costs. BellSouth has indicated the appropriate common cost and developed a cost factor that when applied to a TELRIC will identify the share of forward-looking common costs that should be included.

The result of adding a share of the common costs to our TELRIC cost study gives us the economic cost which the FCC defined in its order. While these studies are somewhat complex, I believe that you will be able to see that what we have done is logical, complete and accurate.

The TELRIC loop study filed in this proceeding represents the cost that BellSouth will incur in the near future when provisioning loops. Should this Commission find it is appropriate to price unbundled network elements based on the FCC TELRIC pricing methodology, BellSouth's TELRIC loop study provides the basis for establishing the local loop

rate. Until TELRIC studies for the remaining elements are completed and supplied to this Commission, BellSouth recommends that the Commission recognize the results of the TSLRIC studies as being the foundation for the TELRIC cost study. Therefore, the TSLRIC results form the price floor for these network elements. This concludes my summary.

MR. LACKEY: Ms. Caldwell is available.

MR. HATCH: Madam Chairman, before we start, it might be useful, since I think a lot of the questions are going to result not only from the TELRIC study but the underlying TSLRIC study, I believe Staff has identified that and it's accompanying documents from Ms. Caldwell's deposition as an exhibit. It might be useful to have that done now.

MS. CANZANO: So you want the deposition exhibit and all of the confidential -- should we just identify all of our confidential documents right now?

MR. HATCH: I'm assuming it's both of her depositions and the related exhibits.

MS. CANZANO: Staff has marked for identification DDC-22, which consists of Ms. Caldwell's deposition transcript from September 27th, 1996, as well as Late-filed Exhibits 1 through 6. Ms. Caldwell, do you have any changes to make to

that deposition transcript?

WITNESS CALDWELL: No, I do not.

MS. CANZANO: At this time Staff would like to have that identified as an exhibit.

CHAIRMAN CLARK: We'll identify that as Exhibit 69.

(Exhibit 69 marked for identification.)

MS. CANZANO: Also we have DDC-23, which consists of portions of cost studies in 950985, that docket, regarding switched access local transport restructure, and it's my understanding that BellSouth has agreed to stipulate this into the record; is that correct?

MR. CARVER: That's fine.

MS. CANZANO: Also, Staff has identified DDC-24, and that consists of Ms. Caldwell's deposition transcript from October 7th, and also at that time we had asked for late-filed Deposition exhibits. We have received Late-filed Deposition Exhibit No. 1, but at this point in time we have not received Late-filed Deposition Exhibits 2 and 3, which we would like to ask as late-filed exhibits. I don't know if that's appropriate to do later.

CHAIRMAN CLARK: Let's hang on just a minute. We will mark as Exhibit 70, DDC-23, which is

the cost studies.

(Exhibit 70 marked for identification.)

CHAIRMAN CLARK: Then as Exhibit 71 -- let's just identify the deposition transcript as that exhibit, and then when you get all the late-filed deposition exhibits we can do it as one exhibit.

MS. CANZANO: Why don't we go ahead and mark Late-filed Deposition Exhibit 1 in this 71.

CHAIRMAN CLARK: Okay.

MS. CANZANO: Because we do have that one, and that is included in this exhibit.

CHAIRMAN CLARK: All right. That will be marked 71 is the deposition transcript from October 7th plus Deposition Exhibit No. 1.

MS. CANZANO: And we also have included in that exhibit BellSouth's response to Staff's second set of production of documents Nos. 6 and 36.

CHAIRMAN CLARK: Those will, likewise, be included in that Composite Exhibit 71.

(Exhibit 71 marked for identification.)

MS. CANZANO: Ms. Caldwell, do you have any changes to make to the deposition transcript identified on October 7th?

WITNESS CALDWELL: No, I do not.

MS. CANZANO: Or BellSouth's responses?

WITNESS CALDWELL: No, I do not.

MS. CANZANO: And are those true and correct to the best of your belief?

WITNESS CALDWELL: Yes.

MS. CANZANO: Thank you.

CHAIRMAN CLARK: I note that those are all confidential exhibits; is that correct?

MS. CANZANO: That's correct.

MR. HORTON: Madam Chairman, could I just ask a clarification question?

CHAIRMAN CLARK: Yes, Mr. Horton.

MR. HORTON: Exhibit 69 is the deposition transcript, and as I recall, late-filed -- yes, Late-filed Exhibit 1 was the MFS deposition and exhibits; is that correct?

MS. CANZANO: Yes.

MR. HORTON: Okay. Thank you.

CHAIRMAN CLARK: Mr. Melson.

MR. MELSON: Commissioners, it might help if the Staff were to pass out the confidential exhibits. I believe much of the cross is going to go to those, and we're going to avoid enunciating numbers.

MS. CANZANO: Can we take a break for five minutes, please, because we need to discuss something with the parties?

CHAIRMAN CLARK: All right. We will take until quarter of, or 10 of for you to sort that out.

(Brief recess.)

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CHAIRMAN CLARK: We'll reconvene the hearing. Mr. Melson.

CROSS EXAMINATION

BY MR. MELSON:

Q Good afternoon, Ms. Caldwell. I'm Rick Melson representing MCI. I'm going to be brief, although it may not seem that way at the outset, so don't get worried. Your TELRIC cost study was filed with the Commission and provided to the parties on Friday of last week; is that correct?

A October the 4th, that is correct.

Q And then we took your deposition on Monday the 7th regarding that cost study; is that correct?

A Yes.

Q And I believe during your deposition MCI asked you for a late-filed exhibit that would explain the derivation of some directly attributed shared and common cost factors on a certain page of that exhibit. Do you recall that?

A Yes, I do.

Q And you provided that to us on Tuesday of

this week; is that correct?

A I believe that was the correct date.

Q After the deposition on Monday?

A That's right.

Q And that document -- and I've put a copy in front of you. It is not in the Commissioners' packages and I'm not going to refer to it in a way that you'll need to look at it. That consists of a 629-page printout of a single spreadsheet; is that correct?

A Yes, it does.

Q And if I wanted to look at that spreadsheet all at once -- and you were kind enough to provide us a copy on diskette -- but if I wanted to look at this hard copy, I would lay down 17 rows of paper in this direction and 37 rows in the other direction and tape them together or something.

A Yes, it is a very long spreadsheet.

Q And there are a number of places in the spreadsheet where the printout has got a series of stars; and can you tell me what that means?

A Was it in terms of -- you mean stars, or were they pound signs?

Q Little asterisks. Look on Page 433 for an example. The last entry in the last column on the

page called "Loadings, Total All Accounts for Retail Account 6623" has got some stars in it. What does that mean?

A In Lotus, the program 4.0, when the size of the number, meaning the digits that is in the sale is too large to print, it prints asterisks. However, the calculation itself is still maintained in the program.

Q So if I wanted to see that number, I could go back to the diskette and change the column width and perhaps see it?

A Yes, you could.

Q In your TELRIC cost study, we were looking at Page, I believe, 104 -- excuse me -- Page 64 of that study, column G which was where the directly treated shared and common cost factors were shown. Could you take any one of the factors of your choice out of that column G and show me where the factor appears in this Late-filed Exhibit 1?

A In terms of the information that is provided in this particular docket, the calculations were actually performed by another individual. I monitored the methodology and the calculations. Being able to turn to the exact page, I cannot do it at this time.

Q Is it your belief that that number appears somewhere in this 627-page document?

A The calculation of the factor should be in the docket -- excuse me -- in the document. We were to supply everything so that it tracked back for you.

Q If I could invite you to turn to Page 612 of that document, is the individual who worked on those calculations here today?

A No, he is not.

Q On Page 612, the fourth entry down -- and let me confirm with BellSouth, the row headings, the names of the rows on this page are not proprietary, are they? Page 612.

MR. LACKEY: You're looking at Page 612?

MR. MELSON: Yes.

MR. LACKEY: And we're talking about the label on the row?

MR. MELSON: Yes.

MR. LACKEY: No.

Q **(By Mr. Melson)** The fourth entry there says "Directly Assigned and Directly Attributed Retail Costs." Can you describe for me in words what that means?

A Yes, I will be glad to. In developing these costs, one of the things we wanted to be sure of is that we did not include any retail cost in the wholesale calculations for the network unbundled

elements. So this calculation that was -- what this actual definition here represents is from the data. We calculated all the directly assigned costs from retail and all of the directly attributable costs to remove them from the overall calculation.

Q And if I look four lines further down at Directly Assigned and Attributed Wholesale Common Costs, does that represent the same category of costs with respect to wholesale services that the previous line did with respect to retail services?

A Yes, the same type costs.

Q Then explain to me the difference between Line 8 and Line 10, which is Directly Assigned and Attributed Wholesale Common Costs and Total Directly Assigned and Directly Attributed Wholesale Costs.

A Can I have just a second to be sure I'm with you?

Q Sure.

A All right. In looking in this particular form, you have a directly assigned and directly attributable wholesale common cost and then your total wholesale common costs. In the calculation, you would have -- we actually calculated the directly attributable costs on a per account basis.

For instance, for each plant account that

was included in the loop -- 257-C would be an example -- we calculated the directly attributable on that account basis. Then over and above that, there were some direct costs to wholesale that could not be attributed to any account, so that would account for the additional costs that you would pick up in terms of the total wholesale common costs.

It would be both of those. It would include the directly attributable -- excuse me -- you would have the directly attributable costs, and then you would have the direct common costs. The next step was to calculate a portion of the common cost to be allocated, so we used both of those numbers in our calculation.

Q I guess my confusion -- and let me try to ask the question this way: There are three line entries that relate to retail costs. There are four line entries that relate to wholesale costs. What component is included in your wholesale cost calculation that's not included in your retail cost calculation?

A Okay. In calculating the common cost factor for wholesale -- that was our main interest -- we did not take the resale all the way to a factor that would have allocated common costs to the resale category.

So we did not do as much detail work in terms of the retail calculation. We just guaranteed that the costs were removed from the wholesale calculation.

Q If you turn to the last page just a moment, Page 629 -- I say the last page. I don't know whether it is or not -- 629, do you see the entry there that corresponds to directly assigned and attributed wholesale common costs? I believe if you lay Page 629 down next to Page 612, that's probably the easiest way to do it.

A Yes.

Q Do you see that number?

A Could you repeat that, please?

Q Yes. Directly assigned and attributed wholesale common costs.

A Yes, sir.

Q If I were to ask you to trace back how that number is calculated in this spreadsheet or the sources of it, could you do that?

A No, sir, I personally could not do that now.

Q I've got no further questions. Thank you.

MR. LEMMER: Good morning, Commissioners. Thomas Lemmer for AT&T.

CHAIRMAN CLARK: Go ahead, Mr. Lemmer.

CROSS EXAMINATION

BY MR. LEMMER:

Q Good morning, Ms. Caldwell.

A Good morning.

Q Just to be clear on your responsibility for the various studies we have looked at, would you describe for me what your responsibilities were, please?

A Yes, sir, I'll be glad to. In dealing with the cost studies, we filed approximately 14 cost studies in this proceeding. In the loop world, my organization -- I'm a manager at BellSouth, and I have individuals who at the time were reporting to me who actually calculated the direct -- the costs associated and investments associated with the digital loop carrier and the multiplexer, which would be your 257-C accounts.

I also worked with the individuals who ran the final loop numbers developing the forward-looking overlay network to be sure all the costs were forward-looking. In addition to that, I monitored the study and looked at the final outputs in terms of the loop. In the interoffice world -- there is one study associated with interoffice -- my group was totally responsible for that file. The DS-1 study, my group

developed all of those costs.

The other services, such as operator services, directory assistance, those type, I have sat down with each individual who performed those studies. We've gone through the calculations. I followed most of the calculations all the way from the beginning to the end, talked about the methodology looking at consistency.

Q So are you the individual within BellSouth who is responsible for ensuring compliance with the FCC TELRIC requirements when you prepared these studies?

A No, sir, I'm not the only individual. In dealing with the assignment of the TELRIC, many individuals in the cost department looked at the order, analyzed the way the data could be calculated, and then each individual performed their own activity. My major role was to look at it from an overall cost methodology standpoint and consider how it would be applied and presented in these hearings.

Q So are you authorized to represent to this Commission that the Exhibit Number 68, which is the TELRIC study, is a study that complies with the FCC requirements?

A Yes, sir.

Q And in your opinion, it does comply with those requirements; is that correct?

A Yes, sir.

Q Okay. Let's talk about very briefly there are several important aspects of developing a TELRIC type cost. And just so we all understand what we're talking about, one of the key requirements is that it be forward-looking; isn't that correct?

A That is correct.

Q And by forward-looking, we're talking about projecting into the future what costs may be over a period of time; is that correct?

A Yes.

Q And that forward looking does not look backward into embedded costs; is that correct?

A Yes, sir; no embedded costs are included in this study.

Q In addition to forward-looking, we're talking about long run; isn't that correct?

A That is correct.

Q And by long run, we're talking about the period of time in which we look forward into the future; is that correct?

A No, sir, not exactly. In dealing with terms of long term, we are looking at some period into the

future. I want to specify that in this study in terms of long run, what you want to be assured of is if you look at a loop from one end to the other -- because that's the study we're discussing -- that each item of plant in there exhausts, so that you would consider, for instance, the cable would exhaust; so we would include cable. The digital loop carrier would exhaust. We would include cost associated with additional digital loop carrier. And so from that standpoint, it is a long run study appropriate for calculating the TELRIC cost.

Q So then you would agree that the appropriate definition of long run is the period of time it takes to exhaust the various items of materials and equipment that you need; is that correct?

A No, sir, I would not agree that there is a period of time. It is the assumption that is included in the study -- there's not a miracle time period. It's just that in that study you have assured that all costs in the long run are avoidable or variable, which means that there would be costs -- you would include costs for each item of plant.

Q Well, how do you assure that there's going to be a variableness or that the costs will vary if you don't have a period of time in mind?

A In looking at the analysis, if you have identified for each item of plant in the study, as I mentioned, an exhaust period, and have included the cost associated with, in this case, looking at an additional loop, then you have covered the time period.

Q So would you agree with me that in defining long run then, there may be differing periods of time depending upon what the particular item of equipment or material is that you're dealing with?

A Yes, sir, but let me clarify. In looking at the time, you would not, for instance, study one item of plant and consider it, what's going to happen in a 10-year time period or another item in 20 years. What you're doing is looking at each individual item of plant and assuring that you have included costs for those items of plant.

Q Now, isn't it a fact that the FCC order defines long run in terms of exhaustion of the particular item that you're dealing with?

A I do not remember the exact terminology in your reference there, sir, but I do remember it does talk about that in the long run all costs are -- and I believe it used both terms, avoidable and variable.

Q Let's move to the third important aspect or

definitional component when we're looking at TELRIC and that is most efficient. Would you agree with me that when you're defining or determining what is most efficient, you're talking about technologies that are capable of use today and into the future?

A Yes, sir.

Q And just to boil down the whole TELRIC process -- and I think you would agree with me that there's a lot of discussion about it in the FCC order. Would you agree with that?

A Yes, sir.

Q To boil it down, would you agree that the whole point of TELRIC is to assign as many costs directly to the particular element you're dealing with as you possibly can?

A Yes, sir. The order does specify that you assign as many directs costs as you can.

Q And the reason for that is to minimize the amount of costs that you have to allocate to those particular elements; isn't that correct?

A I can't really answer that with a yes or no. In terms of -- I believe the order does discuss the fact that you would have, in looking at a total element, a smaller amount of common cost that you would have to allocate in the end.

However, I gave an example in my summary that I believe associated with the loop that says that there are direct costs when your cost object is now an element rather than a service that would be directly assigned. It would no longer be in a shared or common calculation.

Q So then you would agree that the objective is to minimize the amount of common costs that have to be allocated when you're doing a TELRIC process?

A In dealing with the common costs, you would minimize it by applying the directly attributable to the items, not just necessarily for the purpose of just totally minimizing that amount.

Q Let's talk about the various studies that have been submitted and attached to your direct testimony. The exhibit that has been identified -- your exhibit that was filed with the TELRIC cost that has been identified as Exhibit 68 in this proceeding is a TELRIC compliance study for the loop in your opinion; is that correct?

A Yes, sir.

Q Now, the other studies that were attached to your direct testimony are not TELRIC studies; is that correct?

A No, sir. We had not completed TELRIC

studies. Those are TSLRIC studies.

Q And because they are not TELRIC studies, they do not comply with the FCC rule; is that correct?

A No, sir, they do not.

Q Now, is it also correct that there are no studies submitted for local switching?

A The only study submitted in terms of local switching in this particular proceeding is the local usage cost study, and local switching is included in that calculation.

Q But there is no specific study regarding local switching?

A Not as a stand-alone, no, sir.

Q And there is no specific study relating to common transport; is that correct?

A Could you repeat that?

Q The exhibits attached to your direct testimony do not include a study relating to common transport; is that correct?

A Again, the same answer would apply in that the cost is included in the local switching. There is not a stand-alone cost study.

Q And, similarly, there is not a specific cost study relating to tandem switching; is that correct?

A Correct for the same reason.

Q And do you or attachments to your testimony contain a cost study relating to the cost of interconnection?

A No, sir, not in this proceeding.

Q And do they contain a cost study relating to transport and termination?

A In this particular proceeding there is a dedicated cost study for a 2-wire interoffice. That would be the only example.

Q So that is the only study that comes close to transport termination; is that correct?

A Yes, sir.

Q Okay. Let's talk about your studies now. And the purpose of your studies, as I understand them, is to identify -- or measure I should say -- recurring and nonrecurring costs; is that correct?

A Yes.

Q And that the purpose of the costs that you developed for non -- excuse me -- for recurring purposes is to identify a recurring cost -- let's focus on the loop -- a recurring cost for that -- for an individual loop for a period of time, usually a month; is that correct?

A Yes, sir. It is a monthly cost, and it is for a statewide average loop in the state of Florida.

Q So you develop an average cost?

A It is not an average cost. It is the cost of an average or typical loop in the state of Florida.

Q And by typical loop, define for me what you mean by typical loop.

A In this particular study what we have done is look at a statistically valid sample of loops for the state of Florida. So in costing out each one of those loops and then averaging the final result, it would be the cost of a typical or average, statewide average loop.

Q If you would turn to Page 10 of your direct testimony, and I'll be looking at Pages 10 and 11 of your direct testimony for a few minutes.

A Would this be in AT&T?

Q Yes. I'm sorry. Now, as I understand those pages, those pages describe an eight-step process that you go through to reach what I will call a TSLRIC type cost; is that correct?

A Yes, sir.

Q Is that a fair statement?

A That's a fair statement.

Q And then in your TELRIC study there is what I'll call the step 9 described, which adds in the components that TELRIC requires be assigned to a

particular loop; is that correct?

A Yes. The directly attributable is listed as step 9 or an additional step.

Q Now, the first step is that you talk about on Page 10, your direct testimony relates to network design. Would you agree with me that that is the key point or the essential step you need to take to have a proper study completed?

A Yes, sir. In developing any type of network architecture, it's very important that you get the components, the physical components that will need to be studied.

Q So if you added too many components, your costs would be overstated, and if you failed to identify a sufficient number of components, your costs would be understated? Is that a fair statement?

A Yes, sir. As I stated, it's important to use the components necessary for whatever item you're studying, and that's why we used the sample data.

Q Now, I believe you stated that the architecture in your study for the loop, the TELRIC study for the loop, was the result of a statistical sample; is that correct?

A Yes, sir.

Q Let me ask you to turn to documents that

have been identified as Late-filed Caldwell Deposition Exhibit 1, and it's part of the Exhibit 69 that has been identified in the study. And, Commissioners, I believe it's part of the packet that was just delivered to you. Do you have that?

A Let me check. I believe it's maybe in this set.

MS. CANZANO: You just need to ignore the labels of this folder, the small thin folder.

WITNESS CALDWELL: Let me verify that it is the Exhibit 1 associated with the Dockets 950984 and 960757.

Q **(By Mr. Lemmer)** That is correct.

A Okay I'm with you.

Q I will turn to the first page of this document that has a first paragraph that's labeled No. 1 at the top.

A Yes.

Q The discussion in this document relating statistical sampling, does this describe how the statistical sample was done for the TELRIC study for the loop?

A It gives the general concepts associated with the methodology for selecting the -- excuse me -- the actual loops you will sample, and then provided

the sample size.

Q But the sample size that's described on this Page 1, is that the sample that was used to develop the TELRIC study for the loop?

A Yes, sir.

Q So based on that, is it fair to say that you sampled approximately 350 loops in the state of Florida?

A Yes. In the sample that was provided is approximately, as you said, 350 loops, but remember, this is a statistically valid sample.

Q And there are -- I think you said in your opening statement there were about 4 million loops in the state of Florida; is that correct?

A Yes, sir.

Q And how do you know this is a statistically valid sample?

A We have a statistician at BellSouth that has verified all of this data working from the beginning to the end for validation.

Q And the purpose of this statistical sample is to develop what I will call a representative loop; is that a fair statement?

A That's a fair statement.

Q Would you label it, in a sense, a model, a

model loop?

A I guess you could use that term.

Q Now if you turn to the next page that has a No. 2 at the description at the top, and attached to that do you see these various pages that go into identifying the length of the particular loops of the sample. Do you see that?

A Yes, sir.

Q Do you know whether the longest loop in this sample is the longest loop in the state of Florida?

A No, I do not.

Q So then it's possible your model would not reach to the longest loop in the state of Florida; isn't that correct?

A It is possible that the sample data did not include that loop. However, the information would still yield -- from a statistically valid sample would still use a valid typical loop for Florida.

Q And why is that? Because the sample constructs an average?

A In dealing with the sample data, again I want to stress I'm not a statistician, so I don't want to get too far into that area. However, we've worked with the statistician as dealing with the sample size and the individual random loops that were pulled, and

they -- excuse me -- the statistician verified that it would be appropriate for the state of the Florida.

Q So you relied on your statistician to convey to you a representation that the representative loop that they developed through the sample was appropriate?

A Yes, sir. As I mentioned again, we do deal with specialists in this area, and a detailed analysis was done by the statistician.

Q If you turn over a few more pages to the page that begins with No. 4, where it talks about provide, is the distribution of loops.

A Yes, sir.

Q Do you see that page?

A Yes.

Q As I understand this page, it is a summary of the results of the statistical sample and summary in the form of that it's aggregating the various loops that were included in the study by type of loop. Is that a fair statement?

A Yes, sir.

Q Now looking at the residential loops, based on the design numbering that's in the second column, I assume that there are at least 15 design types of loops for residences in the state of Florida; is that

correct?

A Yes, sir; but let me clarify one thing here. In dealing with the model, and there is also a page in the cost study that includes this -- the actual designs that are used, what we are looking at is the forward-looking designs; for instance, whether or not it's served totally on copper or whether or not it's going to be fiber to the customers' prem or something of that type. So these design numbers that are listed here are the designs that's used in the model that calculates the cost.

Q So these loop designs then are the forward-looking architectures of loops?

A Yes, sir.

Q Now, looking at the -- at this document, be it residence or business sample, do you see any loop in there that is an integrated digital loop carrier?

A No, sir, I do not; and let me clarify something if I was confused -- if I might have confused you. In dealing with the unbundled loop area, we are looking at a loop that will be delivered as a stand-alone component unbundled, so that the ALEC in this case could connect it directly to their switch. So from that standpoint, the integrated was not included in the calculation for the unbundled

loop. It did not mean that there was no such thing as an integrated loop.

Q Now, are you aware that integrated digital loop carrier type loops constitute 20% currently of the loops in the state of Florida?

A No, sir. I do not know what the number is.

Q Well, let's assume that that number is correct. That would mean that this statistically valid sample failed to pick up loops that represent one in five loops in the state of Florida; isn't that correct?

A No, sir. And, again, I believe there's a point of confusion, and let me clarify it. The sample data when it was pulled included all of those loops, so in the actual sample if it was integrated -- an existing loop today that was integrated into the switch would have been shown as integrated.

However, when we were doing the analysis for the unbundled network element, we included -- we redefined that as a nonintegrated loop. Again, these are the designs that is in the unbundled loop study.

Q So the universe from which you pick the samples excluded any loop that was an integrated digital loop carrier type loop; isn't that correct?

A No, sir. The sample data actually pulled

the integrated loop. However, when we made our cost study for the unbundled network element, we converted that to the nonintegrated.

Q And when you made that conversion, that increased the cost of that loop, didn't it?

A The nonintegration does include a COT, which adds cost. However, that is how you would provide a voice grade circuit to, say, for instance, a collocated ALEC.

Q Do you know why the decision was made to not include integrated digital loop carriers in the sample?

A Yes, sir. The decision was made in terms of the study for the cost by the definition for the unbundled network element, the loop, which would allow it to be handed off to the ALEC at a voice grade level.

Q And do you know who directed you to make that -- to use that standard?

A In developing the cost components for the network elements, we met with the engineers responsible -- working with the network elements and also, I believe, Mr. Bob Scheye that you met this morning, that deals with what would be offered in terms of negotiation.

Q Now, looking at this page that we've been looking at that begins with the number 4, it indicates again that there were 350 samples taken; is that correct?

A That is correct.

Q Was there any analysis done as to how many of the census block groups were represented in this sample?

A At the time the data was taken, I do not believe so.

Q So then you don't know how many census block groups were included in this sample?

A No, sir, I do not.

Q Now, continuing down the methodology, we've been discussing the design of the network, which you agreed with me, I believe, that that was the -- that was key to this, the way you develop your costs. Would you still agree with that?

A Yes, sir.

Q So if you look at Page 11 of your materials, we have steps 2 and 3 that are followed, and your testimony indicates that there are factors that are applied to the architecture that you develop. Is that a fair statement of what's in 2 and 3?

A One moment. (Pause.) Yes, sir. In step 2

we actually developed the material prices from contracts and then we convert those to installed investments using in-plant factors.

Q So in steps 2 and 3, if the architecture that was determined in step 1 contains too much equipment, then the dollar amounts that result out of 2 and 3 will be overstated, won't they?

A Yes, sir. However, we used, as I mentioned earlier, the sample data, and we feel we have the correct equipment in there.

Q Now, looking at step 4, step 4 is applied to the -- we've taken the architecture and we've put some dollar amounts on the architecture, and then step 4 describes utilization. Would you tell me what utilization means?

A Step 4 that's listed on Page 11 deals with the TSLRIC study, and we're talking about spare capacity, and this would be, say, for instance, 100-pair cable, if it had a utilization factor of 70, you would have 30 spare pairs.

The purpose of those spare pairs is to account for maintenance. For instance, if a pair goes bad you can cut it to another one, or also growth, and that is because it takes time to -- from the beginning of a cable placement job to the completion to get the

cable into plant and into service. So from that standpoint you want to be ready to serve your customers; so you do have a growth component.

Q Now, this growth component that you mentioned, explain to me how that is factored in. Let's make the assumption that you're putting in new cable, and let's make further assumption that this utilization factor is defined as 50%. Are you with me so far?

A Yes, sir.

Q What would that 50% that -- the 50% that is excluded -- maybe I ought to change my percentages. Let's say we use a 40% utilization factor, so we have a 60% nonutilized amount. What component of that is generally related to growth, if you know?

A In general, the only area that you're going to have a utilization that small a percentage is in terms of -- I believe you said 40%.

Q Correct.

A Is going to be in the loop world in the distribution area. And in the distribution world is in people's neighborhoods and where they have their yards and driveways. So it's the additional facilities that would be prepared -- excuse me -- that will allow for the second line to a home, or in other

words, to -- so that you would not have to go back to that home as readily for that small a utilization factor.

However, in the feeder routes it's much higher, because you are going to reinforce in a three to five-year time frame normally; so, therefore, it would be the time in that particular scenario to place the new cable.

Q Now, the purpose of the utilization factor is to spread the entire cost of the particular material we're dealing with to the users; isn't that correct?

A In this particular case, on the actual working loops.

Q So in my example with the 40% utilization factor, the -- an individual who is using that component will be paying, in a sense, 2.5 times what they would be paying if there was 100% utilization; is that correct?

A In your -- yes, sir. In your analysis on the numbers, that would be correct. But let me point out in terms of the distribution, since we were talking about the 40%, one of the high costs of copper, which is the type distribution we use, is the placement cost, and it's much cheaper on a per pair

basis to go in the first time and place the facility with enough relief rather than to come back.

Q But let me ask you this so I can understand: The 40% we're talking about in my example, does that represent an estimate of utilization of, to use your example, the distribution cable over a period of time, or is that the utilization on the day that it first becomes active?

A I'm trying to follow your logic there. The 40% represents the projected utilization we feel we will have over the entire distribution area. It would -- I do not believe I follow your analysis on the first day in operation.

Q Well, if the 40% represents the projected utilization over the life of this particular item, then by using a 40% utilization factor, BellSouth is saying, we will not be using 60% of that element; is that correct?

A In dealing with the distribution, it allows for the fact that you will be able to provide service in those particular areas.

Q Let me try it from another direction. I'm a user today. My subdivision just got built and I'm one of the first users. And you've used this 40% utilization factor. I'm going to be paying, as I

think we agreed, 2.5 times the amount for this particular item than I would pay if there were 100% utilization; isn't that correct?

A The numbers are correct, yes, sir.

Q And if I understand what you're telling me, the 40% represents the utilization factor out into the future, so I, as this first user, will continue to pay that 2.5% -- excuse me -- the 2.5 times the amount, and I would continue to do that into the future; is that correct?

A I just want to be very careful here. I only deal with costs. I do not deal with prices and what people would actually pay. The cost that is associated with the individual loop that connects to your house includes the cost for additional facilities, or unused capacity in this particular case, so that it would -- across the entire distribution area, you would have the ability to add new lines to each individual home.

Q Now, I'm an individual that moves into an extension of that subdivision two or three years down the line. Based on what you just said to me, I assume there's no cost associated with my service for that particular item we're dealing with.

A No, sir. There is -- that there is no cost.

Remember we're doing long run incremental cost, and it's back to the first definition I gave concerning long run incremental cost. In the long run all costs are going to be avoided, are variable, so therefore you include the cost of the distribution in that calculation.

Q But I am the new user. I'm the new person in this subdivision, and I am not included in your 40% fill factor or your utilization factor, am I?

A In dealing with the particular area -- remember I'm looking at an entire serving area and, therefore, each individual, what we're looking at is the fill for the distribution area, not necessarily one cable to a home.

Q So then in the whole distribution area, that 40% -- let me see if I can phrase this another way. The 40% utilization factor, if that remains constant that says to me, anybody within that distribution zone who was added subsequently to when that distribution first came into being has no cost associated with their service; isn't that correct?

A No, sir. I don't agree with that. In terms of no cost, what you have to remember is we are not costing a single individual customer or location. We are looking at the -- first of all, the distribution

area and then all of the feeder, and then building that up to a statewide average. This is a loop that represents the statewide average loop.

Q So we just finished talking about step 4, which is development of utilization factor, which I think we agreed -- well, let me ask it as a question. The utilization factor is used to take the cost that you come up with and to assign it to the users through this utilization factor, so you come up with a dollar amount per loop based on this utilization factor; is that a fair statement?

A Yes, sir, I believe it's a fair statement.

Q Then we move into -- again looking at your direct testimony on Page 11, we move into another series of steps in which various factors are applied to that amount. We're talking about inflation factors, loading factors, certain probability factors; and these factors, as I understand it, are applied to the dollar amount that comes out of step 4; is that correct?

A Yes, sir.

Q So that if the dollar amount that came out of step 4 was a dollar amount that was too high, then the application of all of these loading factors to that dollar amount would continue to increase the

overstatement of the cost; isn't that correct?

A Yes, sir; if you had an incorrect number that was too high, the cost would, as you move down the steps, be higher. However, the numbers in our TELRIC study are not too high at this point.

Q Now, if you turn over to Page 11 of your testimony, we have a step 8 that's described, and it describes the use of -- I believe it's called annual cost factors. Would you give us a brief description of what those are, please?

A Yes. Your annual costs associated with the -- first of all, the investment of a particular item and then the use of that item, they fall into the categories of the depreciation, the cost of money, and then the income tax on the capital investment, and then it includes operating expenses when you use it, such as maintenance.

There are some taxes, such as ad valorem, your property tax, and then gross receipts tax.

Q Last night I was looking at some of the work papers that you provided relating to step 8 that takes the dollar amount that comes out through steps 1 through 7 and converts that into these annual cost factors, the depreciation and the other factors; and after looking at that, it was my characterization --

and I'm wondering if you would agree with me -- that that is a very complex process.

A No, sir, if you're just talking about taking the investment and applying the annual cost factors. The calculation is to take the investment dollar amount and multiply by the appropriate, say, for instance, depreciation factors, et cetera.

Q So then it's an easy process?

A It can be accomplished in a basic spreadsheet, yes.

Q And how big is that spreadsheet?

A It depends on the number of elements that you are studying.

Q Okay. So we've proceeded through step 8 now, and we have a dollar amount associated -- again focusing on the loop, that is a yearly and then converted to a monthly amount for that particular loop.

The last step we haven't looked at -- and correct me if I'm wrong -- is what I'll call the addition of the TELRIC layer of cost; is that correct? That's not described in your testimony to this point.

A Yes, sir, I have not described -- these steps that are listed here -- let me clarify -- were for the TSLRIC, and I have not described that step.

Q Okay. Now if you would turn to your TELRIC cost study that's been labeled as Exhibit 68 in this proceeding, please.

A The TELRIC; right.

Q That is correct. Do you have that in front of you?

A Yes.

Q What I'd ask you to do is turn in several pages -- and I'm looking at section -- or Part A. I'm going then through the pages. It says Section 1, and then I turn to Section 2, and I'm on the second page of Section 2, and the very first words at the top of the page are "Planned Account Specific Investment." Do you have that page?

A Yes, I'm with you.

Q Let me direct your attention down to the paragraph that's in the middle that starts next. Do you see that paragraph?

A Yes, sir.

Q Does that paragraph describe BellSouth's TELRIC calculation? TELRIC plus calculation, I should say.

A Yes, sir.

Q And this paragraph, as I understand it, describes something that you were talking about

before, and that is the first step is to identify directly attributable costs for each network element; is that correct?

A Would you clarify that?

Q My question is, the first step you take in this TELRIC calculation is to identify costs that have not yet been attributed to any particular element but that, in fact, you can directly attribute to an element. Isn't that the process you're going through at the first step here?

A Yes. What we are doing is we actually perform that on a per account basis.

Q And that analysis divides those costs, I believe you said earlier, between wholesale, retail and then certain costs that might be joint to both wholesale and retail; is that correct?

A Yes, that's correct.

Q And in the process of doing that for identifying what relates to wholesale, isn't it correct that you exclude advertising costs, product management costs and customer service costs?

A In particular for this calculation we have excluded the -- advertising, I believe was the first one you mentioned, and product management. The one thing -- and I want to be real careful on this -- is

on the customer services, we included the interconnection customer services because they would handle the ALECs.

One of the reasons in dealing with this is that we developed regional numbers, and we did not have state-specific data available. I believe Mr. Reid discusses this in more detail as that. When we get to the point once he has completed all nine states, we were going to look back at this component again to be sure that the difference between wholesale and retail is appropriately calculated.

Q And that were division of cost relates to customer services, just to make sure I understand what you just said?

A No. In addition, I believe it includes also considering some product management and advertising. I'm not familiar with the percentages of the numbers that is being discussed.

Q Do you recall testifying before the North Carolina Public Services Commission?

A Yes, sir.

Q And do you remember telling me during that testimony that during this calculation of directly attributable cost, you excluded all advertising, all product management and all customer services?

A Yes, sir. And let me clarify that in the Florida study we have, in the unbundled network element components, we have also excluded those. I just wanted to clarify that at some point in the future we still will be looking at them in more detail.

Q So your testimony then is that advertising, product management and customer services costs have been exclude for purposes of this study?

A For unbundling, yes, sir.

Q The last part of this paragraph describes, to make sure that I understand it -- or the last part of this page describes the calculation in which costs that have not yet been attributed to a particular network element, which we'll call common costs, are allocated among all the network elements. Is that fair to say?

A It's allocated on a percentage basis across -- I want to be clear, that I make this clear -- that we do not take all of the joint and common costs that are left and allocate them to wholesale. We're only allocating a portion of them to wholesale. We're also allocating some to retail, so that the common costs is not totally carried -- let me give you an example. Executive or legal, we do not

take all of the legal department and assign it to wholesale. There is a split between wholesale and retail.

Q And that split, if I understand it correctly, is done on a basis of the costs that have been directly assigned to each network element?

A Yes, sir.

Q So in other words, you would look at all the directly assigned costs to all elements you might be dealing with, you come up with a sum total of that amount, and then you would say this particular network element -- let's say the loop -- the direct costs associated with that are 10% of the total; and so 10% of the common costs would go to the loop. Is that a fair statement?

A Let me just clarify. I don't believe I can answer that with a yes or no. Let me just clarify. We have developed a factor that is applied to all the unbundled network elements. We did not provide it on each individual loop or port, et cetera, that will -- we will be using this factor for all the unbundled network elements.

Q But the allocation is done based on the costs that have been directly assigned to the network element; is that correct?

A Yes, sir.

Q In your TELRIC study, the cost of money that was used was 11.25%; is that correct?

A Yes, that's what we used.

Q And in your TSLRIC studies you used a different cost of money; isn't that correct?

A Yes, sir; in the TSLRIC we were using a 13.2% cost of money.

Q And can you tell me why you used a different cost of money?

A In the TSLRIC study we have been provided from our treasury, BellSouth treasury, they provide it to us at 13.2% cost of money representing in their mind the forward-looking cost for our company.

Based upon the order and the emphasis that the FCC proposed in terms of an 11.25, we chose to do the TELRIC study using an 11.25% cost of money.

Q Now, is it your understanding that the FCC order allows a company to rebut the use of the 11.25%?

A Yes, sir. My understanding of the order is that you can use the 11.25. However, if you wished, you could use some other number, and either higher or lower to, and then justify that particular number.

Q So when you constructed the TELRIC study, is it fair to say that there was -- that you, or whomever

made the decision, believed there was no basis to use a rate higher than the 11.25%?

A At this point in time we felt the best position in terms of the order was the 11.25%.

Q Now if you would turn over to the next page of this Exhibit 68 that we're looking at in the discussion regarding nonrecurring costs. Do you see that?

A Yes.

Q There's a reference in the middle of the first paragraph to the identification of work functions. Is my assumption correct that those work functions are identified and then measured through what are called time and motion studies?

A In some cases a time and motion study is used; in other cases, subject matter experts. Let me provide an example of a work function. It would be, for instance, the -- in the service order processing area, the amount of time to take a service order.

Q And have you provided these time and motion studies to the Commission or the Staff?

A No, we have not. The only ones that would have used time and motion studies, I believe, would have been in the service order area; and, no, I did not.

Q How did the study go about identifying what particular activities would be considered for purposes of developing nonrecurring costs?

A First of all, the cost analyst meets with the individuals responsible for the various -- in this case we normally say products, but in this case, for instance, the unbundled loop; and it would be the individuals that would handle the service order, do the testing, the installation, representatives of each one of those work centers, and discuss what activities would be involved in the time estimates that we would need to include in our cost studies.

Q Now, the various activities you looked at relate to activities to actually installing a loop; isn't that correct?

A Yes, sir. They include activities -- and let me clarify installation. It includes activities for taking the service order, and then installation would be the connecting and testing at the customer premises.

All -- what I'm trying to clarify here is all capitalized labor associated with the cable was included in the recurring.

Q Was there any study done of what activities might occur when you have an existing loop that's

transferred to another carrier?

A As far as a study, we have discussed this with the individuals in the -- the one representation of this in the TELRIC cost study is if it is an existing customer, the special services installation and maintenance, the time has been adjusted down for testing and dispatch -- excuse me -- travel.

Q And is there any documentation that's been provided regarding that adjustment?

A The numbers were actually provided in the study. I do not know if we actually provided any more documentation as to that split.

Q Okay. Let's continue to move along through this study here. As I understand statements throughout the study, the time period for the study is a three-year period; is that correct?

A Yes, sir, we looked at a three-year time frame.

Q Let me ask you to turn through a number of pages in your materials, and where I want you to be is in Section 4, Tab C of this study. The heading at the top of the page would say "Conversion of Cable Sheath."

A Yes, sir.

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(Transcript continues in sequence in Volume 16.)