ORIGINAL

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF D. DAONNE CALDWELL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 990649-TP

AUGUST 11, 1999

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 Director in the Finance Department of BellSouth Telecommunications, Inc. (hereinafter referred to as "BellSouth" or "the Company"). My area of responsibility relates to economic costs.

Q. PLEASE PROVIDE 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 Bellcore. 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. My current responsibilities encompass testifying in cost-related dockets, cost methodology development, and the coordination of cost study filings.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to several issues concerning cost development, concentrating on Issue 3 (a). Specifically, I discuss the requirements that should be imposed on recurring and nonrecurring cost preparation for unbundled network elements ("UNEs"), combinations of network elements, and deaveraged offerings. In doing so, I address the underlying cost methodology, the models, and the major inputs BellSouth believes are appropriate in cost support development. I do not outline specific elements or combinations, either averaged or deaveraged, that should be studied, only the methodology, models, and inputs that should be utilized.

Issue 3a: What guidelines and specific requirements should be imposed on recurring and noncurring cost studies, if any, required to be filed in this proceeding?

METHODOLOGY

Q. HAS THE FLORIDA PUBLIC SERVICE COMMISSION ("COMMISSION") ADDRESSED COST METHODOLOGY PREVIOUSLY?

A. Yes. First, this Commission has previously conducted an exhaustive investigation into cost methodology to be used by Local Exchange Companies in Docket No. 900633-TL. Its findings established Total Service Long Run Incremental Cost ("TSLRIC") as the appropriate methodology to be used for cost support for tariff filings. Recently, the cost methodology, i.e., the underlying economic principles, for unbundled network elements have been addressed in Docket Nos. 960833-TP, 960846-TP, and 960916-TP. The Commission released Order No. PSC-96-1579-FOF-TP ("Order"), on December 31, 1996, in which it first discussed the Federal Communications Commission's ("FCC's") rules and then outlined its interpretation of those cost methodology directives. In fact, the Commission recognized the similarities between the two methodologies, TSLRIC plus shared and common and Total Element Long Run Incremental Cost ("TELRIC") economic cost. On page 24 of the Order this Commission stated, "...we do not believe there is a substantial difference between the TSLRIC cost of a network element and the TELRIC cost of a network element."

Q. WHAT ARE THE ECONOMIC PRINCIPLES UNDERLYING TSLRIC PLUS SHARED AND COMMON AND TELRIC ECONOMIC COSTS?

A. Both methodologies embrace the following principles:

(1) **Efficient network configuration** – the cost should be based on the use of the most current telecommunications technology presently available and the economically efficient configuration, given the existing wire center locations.

(2) **Long run** – the studies should consider a timeframe long enough to reflect the variability of the cost components.

(3) **Volume sensitive and volume insensitive costs are considered** – these are the costs that will be avoided by discontinuing, or incurred by offering, an entire product or service, holding all other products or services offered by the firm constant. A corollary to this directive is the principle of cost causation, i.e., the costs included in the study are those that are caused because BellSouth offers an unbundled element.

(4) **Forward-looking** – both methodologies require a forward-looking perspective.

(5) **Shared and common costs are considered.**

BellSouth agrees that the above mentioned principles should be incorporated into any cost study used to support rates for the "yet-to-be-defined" UNEs and also for the combinations of UNEs. However, in light of past proceedings, BellSouth has some reservations as to the implementation of these principles. In particular, other

parties have advocated a total redesign of BellSouth's network to that of a hypothetical network, a network BellSouth will never deploy. This approach ignores the FCC's statement that the "benchmark of forward-looking cost and existing network design most closely represents the incremental costs incumbents actually expect to incur in making network elements available to new entrants." (FCC Order paragraph 685) An important question to be answered in determining cost is what mix of technologies will be deployed in the future, not what is the most forward-looking technology. The other parties usually advocate that only a flash-cut approach to the latest and greatest design will fulfill the FCC's mandates. However, this is not the case. BellSouth's network is a mix of new and old technologies and BellSouth will continue to deploy older technologies where it makes economic sense to do so.

The Commission has already recognized that consideration must be given to the existing network in developing costs. However, BellSouth does not advocate an embedded view of network design, merely that past decisions may be judged as an indication of future deployment and thus should provide some input into the cost analysis.

Q. WHAT ARE SHARED AND COMMON COSTS?

A. Shared costs are those costs that are unaffected by a change in demand (volume) of any one service or the deletion or addition of a service. Another way to express this definition is that shared costs are the portion of incremental cost shared by two or more services offered by a firm, but not by all services offered by the firm.

Common costs are costs that are incurred for the benefit of a firm as a whole, but not for the benefit of any individual product or family of products. Such costs do not change with changes in the firm's product mix or volume of output. The FCC and the Commission both recognize that shared and common costs should be considered when setting rates for UNEs. In fact, the Commission in Order No. PSC-96-1579-FOF-TP states, "In addition, the FCC states that prices should be based on the TSLRIC of the network element, which is called the Total Element Long Run Incremental Cost (TELRIC), and includes a reasonable allocation of forward-looking joint and common costs." (Order at page 24)

Q. HOW DOES BELLSOUTH PROPOSE TO CALCULATE SHARED AND COMMON COSTS FOR UNES?

A. BellSouth proposes to use an internally developed shared and common model. BellSouth witness, Mr. Walter Reid, provides testimony detailing the development of the shared and common costs within this model. Shared and common costs are important components of the rate setting process and thus should be included in the cost development. However, as BellSouth witnesses, Mr. Jerry Hendrix and Mr. Alphonso Varner, discuss, the process of setting rates is dependent upon other factors.

Q. WHAT COST METHODOLOGY DOES BELLSOUTH SUPPORT FOR UNES?

A. Whether it is termed TELRIC economic costs or TSLRIC plus shared and common

costs, BellSouth supports a methodology that reflects the costs BellSouth will actually incur in providing unbundled network elements to competitors. These costs should be based on an efficient network, designed to incorporate currently available forward-looking technology. BellSouth's provisioning practices and network guidelines need to be considered in the calculation of these costs since this is the only way the costs BellSouth incurs can truly be determined. Additionally, shared and common costs need enter into the equation. The shared and common costs should be based on a projection of BellSouth's anticipated expenses, partitioned based on the allocation method presented in Mr. Reid's testimony.

Q. WHAT COST METHODOLOGY DOES BELLSOUTH SUPPORT FOR COMBINATIONS OF UNES?

A. The cost methodology for combinations should not differ from the cost methodology used for unbundled elements since they will both be used to support rates for items offered to competitors. Thus, the methodology should be based on an efficient network, designed to incorporate currently available forward-looking technology. However, some of the inputs into a combination study may differ from UNE inputs depending on the final list of UNEs and any resulting currently combined UNEs that BellSouth is obligated to provide. For example, if BellSouth must provide a currently combined loop and port, integrated digital loop carrier would be considered to be in the mix of technologies providing that existing combination. In the UNE study, integration is not an option since each element is unbundled and provided separately. Thus, integrated digital loop carrier is not appropriate for individual UNEs. This distinction results from the cost object being

studied rather than the underlying methodology. Additionally, based on the caveats surrounding the definition of a "combination", nonrecurring inputs may differ. A combination defined as "switch-as-is" has substantially lower work times than the work times required to combine two UNEs. Let me emphasize, I am only addressing cost development and methodology. The process for setting the rates may appropriately differ between UNEs and combinations, as BellSouth witness, Mr. Jerry Hendrix, discusses in his testimony.

Q. WHAT COST METHODOLOGY DOES BELLSOUTH SUPPORT FOR GEOGRAPHIC DEAVERAGING?

A. The same cost methodology will be applicable for geographic deaveraging as is used for UNEs and combinations. Geographic deaveraging is merely a finer breakdown of costs into separate subsets based on geographic differences. Some examples of these differences are terrain, distance from serving wire center, and customer dispersion.

For instance, the loop cost is impacted by all of the above. Loop length is a significant cost driver. Urban loops, on the average, are shorter than rural loops. Thus, the cost of urban loops is generally less than rural loops.

MODELS

Q. PLEASE EXPLAIN BELLSOUTH'S COST MODELS.

A. Modeling is an important step in developing both recurring and nonrecurring costs

for unbundled network elements, and BellSouth has utilized a number of models in the development of UNE costs. There are different levels of complexity in the models depending on the component of the network being studied. Before I delve into the details of the specific models BellSouth supports, I would like to outline characteristics common to any cost model. Any modeling tool used for UNE cost development, whether it be a simple spreadsheet or a sophisticated program, needs to incorporate the principles I have previously discussed, i.e., it should reflect an efficient network based on a forward-looking achievable design. Additionally, the realities of BellSouth network guidelines and provisioning practices need to be considered in the model. Inclusion of BellSouth's network guidelines and provisioning practices in the model does not violate the cost methodology principles. In fact, by including BellSouth's methods the resulting model supports those attributes mandated by the underlying cost methodology, economically efficient and forward-looking.

Following is a discussion of each of the models BellSouth utilizes in determining the cost of UNEs.

LOOP MODEL

Q. IN ITS PREVIOUS FILINGS, BELLSOUTH UTILIZED A SAMPLE TO DETERMINE THE COST OF A LOOP. DOES BELLSOUTH INTEND TO CONTINUE THIS PRACTICE?

A. No. BellSouth, in conjunction with INDETEC International, Inc., is currently developing a new BellSouth model for loop investment calculations that will

replace the old loop sample approach. BellSouth plans to utilize the new model for both unbundled loop elements and service-specific loops in the future. However, the filing date established in this proceeding will determine which method BellSouth will utilize in determining loop costs, a sample methodology or the new loop model. The sample methodology produced accurate results. In fact, this Commission stated, "BellSouth's loop sample construction is appropriate." (Order at Page 75) However, the sample approach did have inherent limitations. First, the sample was statistically valid only for the services tested, i.e., only for single line residential and business loops and only on a statewide average basis. Any attempt to stratify the sample into geographic areas for geographic deaveraging could not be statistically supported. Additionally, sampling is extremely labor intensive, requiring many hours to obtain, validate, input and process the data. BellSouth is endeavoring to develop a model that will develop both geographically deaveraged costs for UNEs and service specific costs for retail applications. The new model will incorporate geocoded BellSouth customer serving addresses, the types and quantities of services at each location, as well as geocoded BellSouth remote terminal, cross box and drop terminal locations. It will follow guidelines for technology deployment as found in BellSouth's Loop Technology Deployment Directives. When completed and combined with BellSouth-specific input values, it will produce loop investments that accurately reflect the forward-looking costs of providing service in BellSouth's territory in Florida at a more detailed level than a statewide average.

I will discuss the major inputs later in my testimony, but let me mention here that it is critical that the inputs used in any model reflect the costs BellSouth will incur. Thus, the inputs should be BellSouth-specific and mirror BellSouth's operations in

the state of Florida.

SWITCHING MODEL

Q. BELLSOUTH CURRENTLY UTILIZES TELECORDIA'S (BELLCORE'S) SWITCHING COST INFORMATION SYSTEM (SCIS) MODEL. DOES BELLSOUTH INTEND TO CONTINUE USING SCIS?

A. Yes. The switch is a multi-faceted entity that performs a number of functions, from establishing a call to providing vertical features such as three-way calling. To accurately identify the switch investment necessary for the individual functions, a sophisticated model is required. SCIS is best suited to determine these costs. SCIS is bifurcated into interrelated modules, SCIS/MO and SCIS/IN.

By essentially replicating the actual switch engineering rules provided by the switch vendors, the SCIS/MO module uses a "bottoms-up" approach to establish the fundamental switching investments for each central office switch included in the cost study. The individual switch architecture and the switch vendors' engineering rules are used to identify the investment drivers. The investment drivers are reflected as SCIS/MO user input data such as O+T usage (originating plus terminating), CCS (one hundred call seconds), quantity of analog lines, quantity of digital lines, processor utilization, etc. Using this input data in conjunction with the switch vendor engineering rules, investment tables, vendor discount tables, and other miscellaneous tables within the model, SCIS/MO employs equations to determine the investments associated with the various central office functions. The functional categories express switching equipment components or groups of

components on a fundamental unit basis, e.g., per line, per CCS, per call, per millisecond, etc.

As stated above, SCIS/MO is predicated on the engineering rules provided by the switch vendors. Underlying these rules are the following facts:

(1) The switch is a partitioned entity. The switch is not simply a single investment that is shared by all services and features.
(2) The deployment of most services and features generally do not impact the entire switch. Services and features may rely on different components of the switch depending upon the resources required to provide the proper functionality.
(3) Some switching components are traffic sensitive and others are non-traffic sensitive. For example, switch terminations (ports) are non-traffic sensitive.

SCIS/MO's categorization of switching investment and the expression of that investment on a fundamental unit basis allows for the proper assignment of switching components that are used by multiple features and/or services. For instance, SCIS/MO's expression of the processor investment on a per millisecond basis enables SCIS/IN to determine the processor related investment of a given feature by multiplying the investment per millisecond by the amount of time (expressed in milliseconds) the feature uses the processor. Since the investment per millisecond is the same regardless of the feature/service under study, the resulting cost will vary depending upon the incremental demand the feature/service places on the switch processor. This fulfills the cost causative principle I mentioned in the discussion of cost methodology.

In determining the basic switching investment assignable to an individual feature, SCIS/IN uses feature specific user input data and miscellaneous tables within the model in conjunction with the fundamental switching investments generated by SCIS/MO. SCIS/IN also utilizes feature-related hardware engineering rules to develop the investment associated with the feature-related hardware. It then combines the basic switching investment with the investment associated with feature-related hardware to determine the total unit investment for the feature. For example, consider the three-way calling feature. The central office processor (a fundamental switch component) is used to provide functionality for this feature. Conferencing circuits are also required. Therefore, SCIS/IN essentially develops the investment associated with each of these components and combines them to determine the total unit investment required for the feature.

USAGE MODEL

Q. WHAT MODEL DOES BELLSOUTH USE TO DETERMINE USAGE COSTS?

A. BellSouth utilizes the usage model, Switched Network Calculator ("SNC"). SNC is a BellSouth developed tool that is a hybrid of SCIS and internally developed spreadsheets. SNC utilizes fundamental switch investments developed from SCIS/MO and vendor specifications to identify the switch resources required to set-up and maintain a call. Additionally, SNC determines the interoffice facilities that are required to transport the call and the signaling system seven ("SS7") investments consumed in the processing of a call.

TELRIC CALCULATOR©

Q. IN DOCKET NOS. 960757-TP, 960833-TP AND 960846-TP, BELLSOUTH INTRODUCED THE TELRIC CALCULATOR©. WILL THIS MODEL CONTINUE TO BE USED?

A. Yes. The TELRIC Calculator© converts input data (material prices/investments by field reporting code ("FRC"), recurring additives, nonrecurring additives, and work times by job function code ("JFC")) into cost. This Commission accepted the TELRIC Calculator© as a viable model in their Order No.PSC-96-1579-FOF-TP. BellSouth proposes to use a modified version of the TELRIC Calculator© previously reviewed by this Commission. The underlying methodology is basically the same. However, the model has been revised to enhance the user interface.

Exhibit DDC-1 pictorially displays the interrelationships between the TELRIC Calculator© and the other models and price calculators BellSouth uses to determine costs. The TELRIC Calculator© is the mechanism that performs the mathematical exercise that appropriately applies the correct inflation factors, loadings, annual cost factors, labor rates, tax factors, and shared and common factors to the inputs. Additionally, to ensure consistency between studies, the TELRIC Calculator© serves as the warehouse for annual cost factors, labor rates, loading factors, and inflation factors.

CAPITAL COST CALCULATOR

Q. HOW DOES BELLSOUTH INTEND TO DETERMINE THE CAPITAL COST FACTORS THAT ARE UTILIZED IN THE TELRIC CALCULATOR©?

A. BellSouth proposes to use the Capital Cost Calculator model designed by BellSouth. The model produces depreciation, cost of money, and income tax factors that are applied to investments to calculate capital costs.

The user has the ability to modify a set of variables: debt ratio, cost of money, debt interest rate, net salvage ratio and economic life of assets. BellSouth is filing the testimony of Mr. David Cunningham who will discuss the appropriate depreciation inputs. Additionally, BellSouth witness, Dr. Randall Billingsley, will discuss the appropriate inputs for the cost of money calculation.

Q. IS THE CAPITAL COST CALCULATOR THE SAME VERSION AS WAS FILED IN DOCKET NOS. 960757-TP, 960833-TP, AND 960846-TP?

A. No. Several enhancements have been incorporated into this version of the Capital Cost Calculator. These revisions include the incorporation of survivor curves into the development of the depreciation factors and adjustments for differences in book and tax depreciation. Additional FRCs have also been added. In particular, FRCs for capitalized software (intangible assets) are included due to changes in the accounting rules.

PRICE CALCULATORS

Q. EXHIBIT DDC-1 ALSO SHOWS SEVERAL "PRICE CALCULATORS". DOES BELLSOUTH INTEND TO UTILIZE THESE SAME PROGRAMS IN FUTURE UNE FILINGS?

A. Not entirely. The four price calculators that BellSouth used in the past are the Loop Multiplexer, Digital Loop Carrier, SONET, and DS1 price calculators. These price calculators develop the costs of specialized components used in the provisioning of various network capabilities. These calculators take vendor prices for various pieces of equipment and express the prices on a per circuit level. In essence, the process involves (1) determining the appropriate types and quantities of equipment required, (2) utilizing vendor-furnished price lists, (3) applying a discount rate (if applicable), and (4) dividing by the capacity of the equipment. The price calculators reflect the latest prices, discount rates, and technology applicable to BellSouth. A vendor-provided "configuration" file that details the manner in which the equipment is assembled may aid the first step. With the completion of BellSouth's New Loop Model, the Multiplexer and Digital Loop Carrier calculators will be incorporated into that model, i.e., they will not be separate entities. Yet, the same type of calculation will have to take place within the loop model's equations.

NONRECURRING COSTS

Q. YOU MENTIONED THAT THE DEVELOPMENT OF NONRECURRING COSTS INVOLVES MODELING. DOES BELLSOUTH HAVE A

NONRECURRING MODEL?

A. Not in the formal sense. Each analyst is responsible for obtaining estimates of the activities required to provide the element under study. BellSouth personnel familiar with the provisioning process identify the work groups involved and the amount of time it takes to complete the necessary tasks. Consideration is given to anticipated productivity improvements and potential technological advances that may impact the amount of time required. Thus, the projections are forward-looking, yet attainable. These estimates are entered into the TELRIC Calculator© on the Nonrecurring Input sheet.

INPUTS

Q. WHAT ARE THE INPUTS BELLSOUTH IS ADVOCATING FOR INCLUSION IN THE UNE COST DEVELOPMENT?

A. As BellSouth witness, Mr. Varner, discusses, until the FCC releases a finalized list of elements BellSouth is uncertain as to the exact capabilities that must be offered. Thus, BellSouth is not prepared to offer specific values for all required inputs at this time. However, BellSouth witnesses, Dr. Billingsley and Mr. Cunningham, identify the cost of capital and depreciation inputs, respectively. BellSouth witness, Mr. Reid, describes the shared and common cost model inputs that will be required, but does not identify exact values. Additionally, any restrictions, rules, or limitations issued by the FCC in conjunction with its list of elements may impact what inputs are considered critical.

However, there are overriding considerations that must be taken into account when developing inputs. The inputs should be forward-looking, realistic, and achievable. Additionally, since the objective is to determine the costs BellSouth will incur, it is imperative that BellSouth-specific inputs be utilized in the calculations. The use of BellSouth-specific inputs does not violate any of the cost characteristics I listed previously. BellSouth has been a large, efficient provider of telecommunication service in Florida for many years. Thus, economies of scale, negotiated volume discounts, and experience are reflected in values based on BellSouth results.

Notwithstanding BellSouth's reservations concerning the FCC's upcoming decision, there are general inputs that will be incorporated into any study, regardless of the elements BellSouth is required to provide. If one assumes that the existing elements will still be on the FCC's list, there are certain inputs that are major cost drivers for each of these elements.

GENERAL INPUTS

Q. PLEASE COMMENT ON THE INPUTS COMMON TO ANY UNE COST STUDY.

A. Exhibit DDC-1 outlines the general types of inputs BellSouth will be utilizing in UNE cost studies. Without providing the exact value BellSouth will be using, I will describe each class of input and the process BellSouth uses to determine the appropriate value.

INFLATION ADJUSTMENT FACTOR

Q. PLEASE DESCRIBE THE INFLATION ADJUSTMENT FACTOR AND DESCRIBE HOW IT IS DEVELOPED.

A. Over the life of an investment, inflation causes fluctuations in the forward-looking investment amount. Thus, the investment must be averaged over the study period. Investment inflation factors, by FRC, are used to trend plant investment in base year dollars to a levelized amount that is valid for a three year planning period, i.e., the study period. The investment inflation factors are the cumulative average of three years' projected inflation rates based on BellSouth telephone plant indices ("TPIs").

The TPIs are price indices that measure the relative changes in prices BellSouth pays for the construction of telephone plant between specific periods of time. The development of TPIs uses econometric techniques to establish mathematical relationships between the historical movement in each of the labor and material components that make up the TPIs and the historical movement in explanatory variables. Explanatory variables are usually aggregate measures of the U. S. economy, e.g., price deflators from the national income and product accounts, union wage rates, copper prices, and other macroeconomic variables. Joel Popkin and Company, a BellSouth consultant, assists BellSouth with the calculation of TPIs.

LOADINGS

Q. WHAT IS MEANT BY THE TERM "LOADINGS"?

A. These factors are designed to augment calculated material prices to account for

additional costs that are difficult to ascertain on an individual, element-specific basis. Thus, BellSouth develops mathematical relationships between the material prices and the additional labor expense, miscellaneous material, and support structures to capture the total cost BellSouth will incur.

Q. PLEASE DESCRIBE THE DIFFERENT TYPES OF LOADING FACTORS AND THEIR DEVELOPMENT.

A. One type of loadings are In-Plant loadings ("In-Plants"). In-Plants add engineering and installation labor and miscellaneous equipment to the material price, i.e., In-Plants convert a material price to an installed investment. The installed investment is the dollar amount recorded in capital accounts.

In-Plants are account specific and are developed on the state level. There are four types of In-Plant loadings: (1) Material Loading, (2) Telco Loading, (3) Plug-in Loading, and (4) Hardwire Loading. The Material Loading is applied to a material price, the Telco Loading to the vendor-installed investment, the Plug-in Loading to the deferrable plug-in and common plug-in material prices, and the Hardwire Loading to the hardwire portion of an equipment material price.

In order to reflect the costs BellSouth will incur, the In-Plant factors must be based on information that is specific to BellSouth. BellSouth uses year-end reports, State and Local Sales Taxes, the Resource Tracking Analysis and Planning ("RTAP") System, and Special Report 542 (investments) as data sources. BellSouth is replacing RTAP with ARGUS (not an acronym) this year. ARGUS will contain

RTAP data in a different format.

Q. WHAT OTHER TYPE OF LOADINGS ARE INCLUDED IN BELLSOUTH'S COST STUDIES?

A. Supporting Equipment and Power ("SE&P") Loadings are used to calculate the incremental investment required to support an additional dollar of central office and circuit investment. The SE&P Loadings are developed for the digital switch account (FRC 377C), digital subscriber pair gain account (FRC 257C), and other digital circuit equipment account (FRC 357C). Examples of the support and power equipment included in the 377C factor include power equipment, distribution frames, ladders, tools, and test sets.

The source of the data used to develop the SE&P Loading factors is the Central Office Monthly Allocation Process ("COMAP"), a year-end report extract that identifies total investment and supporting investments for FRCs 377C, 257C, and 357C. As with the In-Plant Loading factors, this is BellSouth-specific data.

In addition to the SE&P Loading factors, central office and circuit investments, as well as computer investments, require loadings for land and buildings. Ratios are developed by comparing central office land and building investments to central office and circuit investments and by comparing computer land and building investments to computer investments. The sources of the data are the Investment Over Accumulated Depreciation report and network projections of plant additions for the study period.

Q. ARE THERE LOADING FACTORS UNIQUE TO CABLE ACCOUNTS?

A. Yes. Poles and conduit are related only to cable placements. In the past, BellSouth developed translators to determine the amount of investment in poles and conduit associated with aerial and underground cable investment. The Pole Loading factor was developed by comparing the investment in poles to the investment in aerial cable. Similarly, the Conduit Loading factor was determined based on the relationship between investment in conduit and investment in underground cable.

The sources of the data are the Investment Over Accumulated Depreciation report and network projections of plant additions for the study period.

ANNUAL COST FACTORS

Q. WHAT ARE ANNUAL COST FACTORS AND HOW DOES BELLSOUTH DEVELOP THEM?

A. Annual cost factors are translators used to determine the annual recurring cost associated with acquiring and using equipment. When an investment is multiplied by an annual cost factor, the product reflects the annual recurring cost incurred by the company. There are basically two types of cost associated with an investment, capital-related costs and operating-related costs.

An investment includes the initial purchase price of the item of plant and all engineering and installation costs required to make that item of plant ready to

provide service. Capital costs associated with the investment consist of three major categories: depreciation, cost of money, and income tax. As I mentioned previously, BellSouth uses an internally developed model to calculate the capital-related annual cost factors based on user changeable inputs.

Plant must also be maintained to provide continuing operations. Ordinary repairs and maintenance, as well as rearrangements and changes, are necessary for all categories of plant (except land) in order to maintain quality service.

Maintenance-type expenses are reflected in the Plant Specific Expense factor. The following types of operations are included:

(1) Inspecting and reporting on the condition of plant investment to determine the need for repairs, replacements, rearrangements, and changes
(2) Performing routine work to prevent trouble
(3) Replacing items of plant other than retirement units
(4) Repairing materials for reuse
(5) Restoring the condition of plant damaged by storms, floods, fire, and other casualties
(6) Inspecting after repairs have been made
(7) Salaries, wages, and expenses associated with plant craft and work reporting engineers, as well as their immediate supervision and office support.

The Plant Specific Expense factor is developed, by FRC, based on three years of projected expense and investment data. Base year expenses are pulled from the

Cost Separations System ("CSS"). Projected view data is obtained from BellSouth's Finance Budget Group for the study period. Base year investments are determined from the Investment Over Accumulated Depreciation Report. Investment projections are obtained from BellSouth Network for the study period. A relationship between the expenses and the investments is established by dividing the cumulative expenses by the cumulative investments for the study period. Adjustments are made for subsequent right-to-use fees, service order expense and rents. Since Plant Specific Expense factors are based on actual and projected BellSouth data, they reflect expenses BellSouth will incur in providing unbundled elements to competitors. Additionally, they reflect BellSouth's network practices, quality of service commitments, budget constraints, and process efficiencies.

Finally, BellSouth pays taxes. BellSouth's Tax Department provides the appropriate tax information, by jurisdiction, to be used in the development of the tax-related factors.

UNBUNDLED ELEMENT SPECIFIC INPUTS

LOOP

Q. THE LOOP ELEMENT IS A MAJOR COMPONENT OF THE NETWORK. WHAT INPUTS ARE THE MAIN COST DRIVERS OF LOOP COSTS AND HOW DOES BELLSOUTH INTEND TO DETERMINE THESE INPUTS?

A. One group of inputs that significantly impacts the loop cost results is the investment (material plus engineering and installation) for feeder, distribution, and digital loop carrier. The loop model design determines the amount of each facility, but the per

unit investment (for example, investment per foot of cable) is also a major cost driver. As explained earlier, the investment includes the material price as well as the cost to engineer and install (E&I) the item of plant. The BellSouth In-Plant factors should be used to calculate the E&I along with BellSouth-specific placing costs.

The material prices should be obtained from procurement records that reflect actual BellSouth purchase prices and contractual agreements. Inherent in the material prices are discounts BellSouth enjoys due to its negotiated contracts. In its Order, this Commission ruled, "it is appropriate to accept the cable costs proposed by BellSouth." (Order at Page 88)

Utilization or fill factors play an important role in the calculation of loop costs. The FCC's TELRIC methodology allows for a reasonable projection of actual utilization to be incorporated into the equation. (Paragraph 682 of the FCC Order) With the new loop model, utilization will not be entered as a percentage. Instead, based on the appropriate standard size cable, customer demand, number of pairs provisioned to each living unit, and a cable-sizing factor, the utilization will be an output of the model. The cable-sizing factors are used to determine the appropriate cable sizes to be deployed. The result should be reflective of BellSouth anticipated future fill in the distribution and feeder routes.

The amount of structure sharing is also a major cost driver. The structure sharing percentages should be BellSouth-specific and representative of BellSouth's achievable sharing arrangements in Florida.

SWITCHING

Q. WHAT INPUTS ARE CRITICAL TO THE DEVELOPMENT OF SWITCHING-RELATED COSTS?

A. The first step in developing switching costs is the population of the SCIS/MO database. Information is entered for each digital office in BellSouth's territory. It is assumed the melded digital results are representative of the analog offices. By year-end 1999, less than 15% of BellSouth's lines in Florida will be served by analog offices. Also, since the Siemens switch constitutes such a small percentage of the total, the melded Lucent/Nortel results are used as a surrogate.

As I mentioned previously, the data reflects the investment drivers, i.e., what will cause exhaust of the switch. The investment drivers are inputs such as O+T (originating plus terminating) usage, CCS, quantity of analog lines, quantity of digital lines, processor utilization, etc. Another important input in the model is the discount rate. BellSouth utilizes a discount that is indicative of the way switching equipment will be purchased in the future. BellSouth buys a limited number of new switches, however BellSouth grows capacity in its existing central offices on a regular basis. Thus, the discount rate should reflect this combination of new/growth purchasing activity.

In determining the investment related to vertical features busy hour usage is an important component. Switches are engineered to handle the busy hour load. Thus, in order to develop flat-rated feature costs, the usage in the busy hour is the

only relevant factor. Inputs need to reflect the anticipated demand that is going to be placed on the switch due to the request for feature-enhanced call processing. Consideration must be given to the number of feature-related calls, holding times, and activations/deactivations that occur.

As with the inputs to the loop model, only BellSouth-specific data will appropriately reflect the costs BellSouth will incur in the provisioning of UNEs to competitors in Florida.

USAGE

Q. WHAT INPUTS ARE CRITICAL TO THE DEVELOPMENT OF USAGE COSTS?

Major inputs to SNC (BellSouth's Usage model) include such items as distribution of calls (intra-office/interoffice split), percent local tandem occurrence, busy hour-full day ratio, average number of facility terminations per call, minutes per call, airline miles per call. The outputs from SCIS/MO also are important contributors to the development of the usage costs. This data should be BellSouth-specific.

NONRECURRING COST INPUTS

Q. WHAT INPUTS ARE IMPORTANT TO THE DEVELOPMENT OF NONRECURRING COSTS?

A. I have previously discussed the manner in which time estimates are obtained. These

inputs drive the nonrecurring costs. However, in addition to the work times, the labor rates are critical in determining the costs to provision unbundled elements. This Commission accepted BellSouth's methodology for developing the direct labor rates in the previously filed UNE studies. It did, however, eliminate the shared component from the labor rate. (Order at Page 63) Additionally, this Commission established a rate structure such that disconnect costs are assessed at the time of disconnect. (Order at Page 69) BellSouth will follow the same process in developing labor rates in the future and will present the disconnect costs as separate elements.

FILING SCHEDULE

Q. WHEN SHOULD THE COST STUDIES FOR DOCKET NO. 990649-TP BE FILED (*Issue 3e*)?

A. BellSouth supports a filing date of 120 days from the date the Order is received.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. This Commission has ruled on the appropriate methodology for developing costs for unbundled network elements, TSLRIC plus shared and common. BellSouth intends on utilizing the principles inherent in this methodology for future cost studies. The incremental costs developed will be long-run and reflect an efficient, forward-looking, yet attainable, network. BellSouth will employ several models to develop future cost support. These models will incorporate the TSLRIC principles and to the greatest extent possible, be open for inspection. Since the results of the

cost study must replicate the incremental costs BellSouth will incur in providing unbundled elements to competitors, BellSouth-specific values are the only relevant source for inputs.

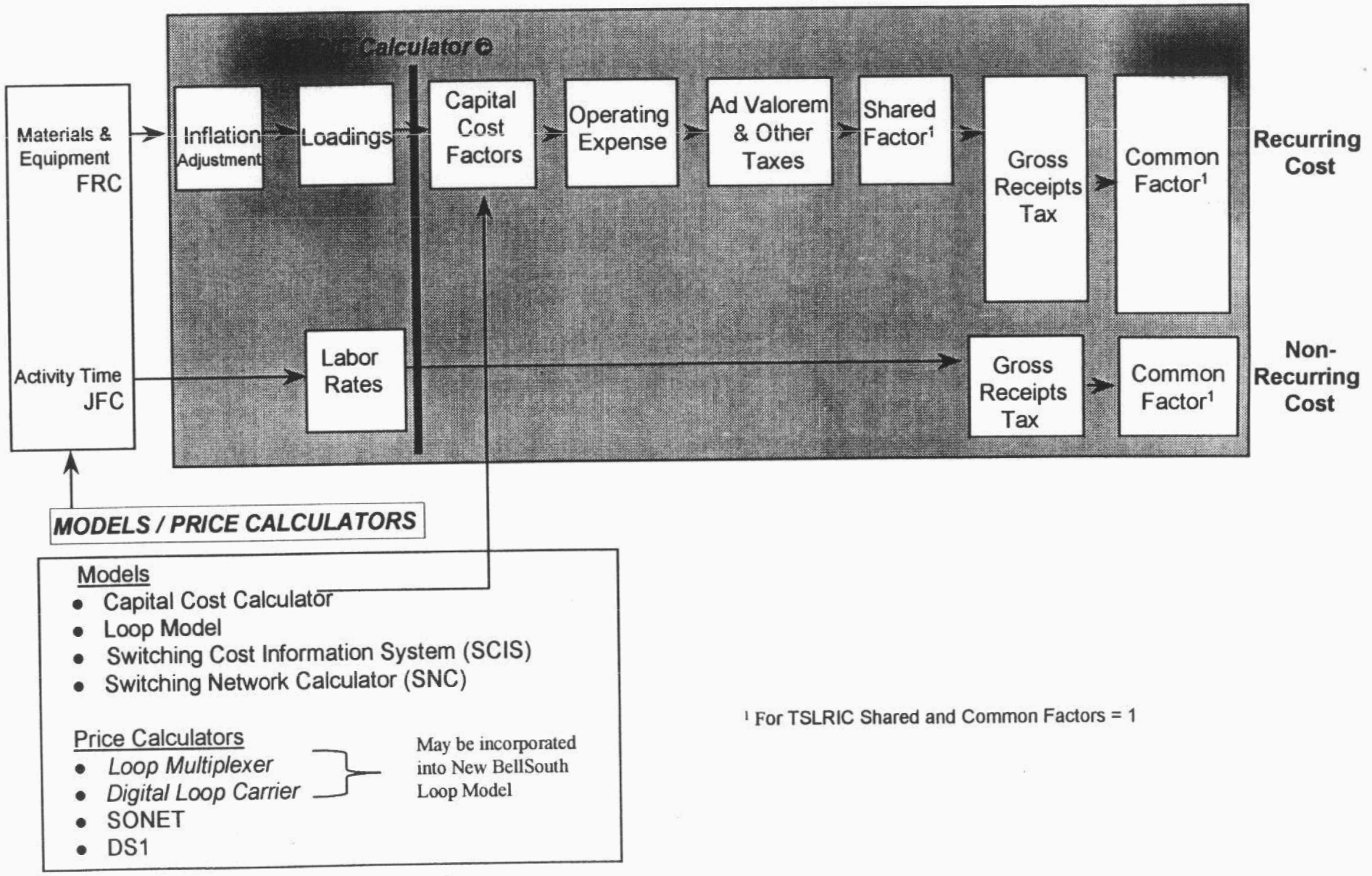
Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BellSouth Telecommunications, Inc.
Florida PSC Docket No. 990649-TP
Exhibit DDC-1

BellSouth Cost Study Process

TSLRIC/TELRIC Calculation



[1] For TSLRIC Shared and Common Factors = 1