BellSouth Telecommunications, Inc.
Suite 2101
333 Commerce Street
Nashville, Tennessee 37201-3300

615 214-6301
Fax 615 214-7406

Guy M. Hicks
General Counsel

November 14, 1997

VIA HAND DELIVERY

David Waddell, Executive Secretary
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37238

Re: *Universal Service Generic Contested Case*
Docket No. 97-00888

Dear Mr. Waddell:

Enclosed are the original and thirteen copies of BellSouth Telecommunications, Inc.'s Response to the Staff's Request for Information, Phase II, Issue No. 16 in the above-referenced matter. A copy has been provided to counsel of record.

Very truly yours,

Guy M. Hicks

GMH:ch

Enclosure

100643

REQUEST:

Phase II - Issues No. 16:

16.: What cost model or method should be adopted to calculate needed universal service supports? (Likely to be contested) 5(a)(vii), 14(b)(i) and 14(b)(ii) Note: the word "method" is used to mean "algorithm(s) and input value(s)."

a. What method should be used to population distributions within service areas?

b. What method should be used to match a model's wire center line count to a LEC's existing wire center line count?

c. What method should be used to determine the proper outside plant mix (i.e., the fraction of aerial, underground, and buried cable) and associated materials and installation costs?

d. What method should be used to determine drop lengths and associated costs?

e. What method should be used to determine structure sharing (e.g., poles, trenches, conduits)?

f. What method should be used to determine the most economically efficient fiber-copper cross-over point?

g. What loop design standards, if any, should be adopted for the cost model?

h. What size(s) of digital loop carriers should the model incorporate?

i. What wireless threshold, if any, should the model use?

j. What method should be used to determine the materials and installation costs of manholes, poles, anchors, guys, aerial cable, building attachments?

k. What method should be used to determine NID costs?

l. What method should be used to determine the cost of investment and installation of service area interfaces?

REQUEST: (Cont'd)

m. What method should be used to determine cable fill and utilization factors?

n. What method should be used to determine the mix of host, stand-alone, and remote switches?

o. What switch capacity constraints, if any, should the model employ?

p. What method should be used to determine switching investment costs?

q. What method should be used to determine the portion of total interoffice trunking, signaling, and local tandem costs to be attributed to universal service?

r. What method should be used to determine costs of general support facilities (e.g., vehicles, land, buildings)?

s. What method should be used to determine the economic depreciation rate of assets?

t. What method should be used to determine plant-specific (e.g., equipment and maintenance), non-plant-specific (e.g., engineering, network operations), customer service (e.g., marketing and billing), and corporate (e.g., legal and accounting) expenses factors?

u. In which cases is it appropriate to allocate costs between the provision of universal service and all other services?

v. In cases where it is appropriate, what method should be used to allocate costs between the provision of universal service and all other services?

w. What, if any, local usage component should be included in universal service support?

x. What is the proper cost and percentage of equity?

y. What is the proper cost of debt?

RESPONSE:

The Tennessee Regulatory Authority should adopt the most current version of the Benchmark Cost Proxy Model (BCPM) as the model for calculating universal service costs. Of the available cost proxy models, BCPM most accurately reflects the costs of providing quality universal service in Tennessee

a. The BCPM houses the methodology and algorithms for developing the cost of universal service in high cost areas. A description of the model and its method of determining population distributions within service areas is enclosed, which provides a high level view of the modeling process and methodology. The details of algorithms used in the model are available by examining the cell formulas in the spreadsheets of the model. Additional information can be found at the BCPM website at http://www.bcpm2.com.

b See response to (a) above. BCPM inputs include a line data file with actual wire center line counts. This file is used to ensure that BCPM line counts match actual line counts at the wire center level.

c. Ideally, actual plant mix data, specific by density and soil type, would be used to develop the cost of providing universal service in high cost areas. However, this information is not available. BCPM includes a set of default plant mixes, by density band and soil type, which reflect reasonable estimates of variations in plant mix due to density and soil types. BellSouth recommends the use of these values in determining universal service costs.

Cable and structure material and installation costs should be based on BellSouth-specific data because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific material and installation costs reflect economies of scale that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

d. BCPM calculates drop lengths from the corner of the lot to the center of the lot. Drop lengths are capped at 500 feet. Algorithms used may be traced through the logic of the model. Drop costs should be based on the calculated drop lengths and BellSouth-specific data because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific drop costs reflect economies of scale that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

RESPONSE:

e. Structure sharing should be based upon BellSouth-specific experience in structure sharing because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific structure sharing arrangements reflect arrangements that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

f. In order to provide adequate transmission capabilities for fax and dial-up modems, BCPM sets maximum loop lengths for copper at 12,000 feet for both feeder and distribution. This eliminates problems arising from loading and resistance. In addition to the 12,000 foot copper-to-fiber breakpoint, the BCPM uses 26 gauge in the feeder and 26/24 gauge in the distribution. 12,000 feet of 26 gauge copper has a resistance value of 999.6 ohms (83.3 ohms per thousand feet @ 68 degrees), well within the 1500 ohm supervisory limit of today's digital switches. The 26/24 gauging used in the distribution takes into account the 900 ohm powering limitations of DLC line cards, without going to the considerably more expensive extended range line cards. However, BCPM does allow copper loops up to 18,000 feet with the requisite adjustment in cable gauge size.

g. The cost model should design a voice grade network using state-of-the-art technology that is currently available for deployment. The BCPM provides a network capable of providing basic single-party voice grade service that allows customers to utilize currently available data modems for dial-up data access. BCPM designs the network to eliminate problems associated with providing voice grade service over loaded loop plant. For more details, see the model methodology documentation enclosed which provides a high level view of the modeling process and methodology. The details of algorithms used in the model are available by examining the cell formulas in the spreadsheets of the model. Additional information can be found at the BCPM website at http://www.bcpm2.com.

RESPONSE:

h. BCPM uses the following size DLC systems:
- 0-24 lines
- 25-48 lines
- 49-96 lines
- 97-120 lines
- 121-192 lines
- 193-240 lines
- 241-384 lines
- 385-672 lines
- 673-1344 lines
- 1345-2016 lines

i BCPM uses a $10,000 loop investment maximum (cap) and produces results both capped and uncapped.

j. Material and installation costs of outside plant should be based on Bellsouth-specific data because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific materials and installation costs reflect economies of scale that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

k. NID costs should be based on BellSouth-specific data because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific NID costs reflect economies of scale that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

l Service area interfaces costs should be based on BellSouth-specific data because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific investments and installation costs reflect economies of scale that an efficient provider would be expected to achieve on a going forward basis in Tennessee.

m. BCPM utilizes a "cable sizing factor" along with the number of pairs provisioned to each housing unit and standard cable sizes (e.g., 100, 200, 300 pairs, etc.) to determine the actual cable fill factors.

RESPONSE:

n BCPM does not distinguish between host, stand-alone and remote switches. The average fixed and per line investments input to BCPM reflect an average of all switching investments.

o. BCPM includes a user input switch fill factor.

p. A fixed/startup investment and an investment per line for switching should be based upon investments in BellSouth switches in Tennessee. BellSouth is a large efficient provider of telecommunications services in Tennessee, and BellSouth-specific investments in switches reflect economies of scale and vendor discounts that a large, efficient provider would be expected to achieve on a going forward basis in Tennessee.

q. Local usage costs for interoffice trunking and signaling are modeled in BCPM as a percentage of switching costs. Local usage costs based on BellSouth traffic characteristics in Tennessee should be used as input to BCPM because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific trunking, signaling, and tandem costs reflect economies of scale and vendor discounts that a large, efficient provider would be expected to achieve on a going forward basis in Tennessee.

r. Forward-looking investments in support assets, expressed as a percentage of total investment (less support investment), should be used to estimate general support facilities' investments. BCPM applies the appropriate support percentage to every dollar of non-support investment placed to provide an estimate of support asset requirements. BellSouth-specific data should be used because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific investments in support facilities reflect economies of scale that a large, efficient provider would be to expected to achieve on a going forward basis.

s. Forward-looking lives and net salvage estimates should be used to determine economic depreciation.

RESPONSE:

t. Plant-specific expense factors should be developed as a percentage of investment to estimate plant-specific operating expenses. Non-plant-specific expenses are developed in BCPM as an expense per line rather than as a factor of investment. BellSouth-specific data should be used in calculating such expense factors because BellSouth is a large efficient provider of telecommunications services in Tennessee. Thus, BellSouth-specific expenses reflect economies of scale that a large, efficient provider would be expected to achieve on a going forward basis in Tennessee.

u Other Property Plant, Network Operations, Marketing, Services, Executive and Planning, General and Administrative and Uncollectibles should be attributed between universal service and other services.

v. Costs should be attributed based on causality. As a surrogate for causality, BCPM attributes the expense categories listed in (u) above to universal service based on the ratio of Basic Local Exchange Service Revenues to Total Operating Revenues. This is a very conservative estimate of the amount of expenses attributable to universal service.

w. See response to (q) above.

x. On a forward looking basis, the proper cost of equity is 13.42%, and the proper debt/equity ratio is 40%/60%.

y. On a going forward looking basis, the proper cost of debt is 8%.

CERTIFICATE OF SERVICE

I hereby certify that on November 14, 1997, a copy of the foregoing document was served on the parties of record, via hand delivery, fax, or U. S. Mail, postage pre-paid, addressed as follows:

Don Baltimore, Esquire
Farrar & Bates
211 7th Ave., N., #320
Nashville, TN 37219-1823

Mr. Thomas J. Curran
Director External Affairs
360 Communications Co.
8725 W. Higgins Road
Chicago, IL 60631

Richard Smith
President
Standard Communications Co.
302 Sunset Dr., #101
Johnson City, TN 37604

Ms. Nanette Edwards
Regulatory Affairs Manager
Deltacom, Inc.
700 Blvd. South, #101
Huntsville, AL 35802

W. T. Sims
Manager
Yorkville Telephone Cooperative
Yorkville, TN 38389

Glen B. Sears
General Manager
West Kentucky Rural Telephone Coop.
237 N. 8th St.
Mayfield, KY 42066

Carolyn Tatum-Roddy, Esq.
Sprint Communications Co., LP
3100 Cumberland Circle
Atlanta, GA 30339

James P. Lamoureux
AT&T
1200 Peachtree St., NE, #4068
Atlanta, GA 30367

Guilford Thornton, Esquire
Stokes & Bartholomew
424 Church Street, #2800
Nashville, TN 37219

T. G. Pappas
Bass, Berry & Sims
2700 First American Center
Nashville, TN 37238

Richard M. Tettlebaum
Citizens Communications
1400 16th St., NW, #500
Washington, DC 20036

Vincent Williams, Esq.
Office of the Attorney General
Consumer Advocate Division
426 Fifth Ave., N., 2nd Fl.
Nashville, TN 37243-0500

William C. Carriger, Esquire
Strang, Fletcher
One Union Sq., #400
Chattanooga, TN 37402

Dan H. Elrod, Esquire
Trabue, Sturdivant, et al.
511 Union St., #2500
Nashville, TN 37219-1738

Jon Hastings, Esquire
Boult, Cummings, et al.
414 Union St., #1600
Nashville, TN 37219

Henry M. Walker, Esquire
Boult, Cummings, et al.
414 Union St., #1600
Nashville, TN 37219

Dana Shaffer, Esquire
NEXTLINK
105 Malloy Street, #300
Nashville, TN 37201

Richard Cys
Davis, Wright Tremaine
1155 Connecticut Ave., NW, #700
Washington, DC 20036

Daniel M. Waggoner
Davis Wright Tremaine
1501 Fourth Ave., #2600
Seattle, WA 98101-1684

Charles B. Welch
Farris, Mathews, et al.
511 Union St., #2400
Nashville, TN 37219

Hubert D. Dudney
General Manager
Twin Lakes Telephone Co.
P. O. Box 67
Gainesboro, TN 38562

James Wright, Esq.
United Telephone - Southeast
14111 Capitol Blvd.
Wake Forest, NC 27587

Dennis McNamee, Esquire
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37243-0500

Wayne Gassaway, Manager
DeKalb Telephone Cooperative, Inc.
P. O. Box 247
Alexandria, TN 37012

Phoenix Network
Attn: Denise Newman
1687 Cole Blvd.
Golden, CO 80401

Jane Walters, Commissioner
Department of Education
710 James Robertson Pkwy, 6th Fl.
Nashville, TN 37423-0375

Jack McFadden, Director
Dept. of Finance & Administration
598 James Robertson Parkway
Nashville, TN 37243-0560

Dana Frix, Esquire
Swidler & Berlin
3000 K Street, NW, #300
Washington, DC 20007

F. Thomas Rowland
North Central Telephone. Coop.
P. O. Box 70
Lafayette, TN 370830070

Val Sanford, Esquire
Gullett, Sanford, Robinson & Martin
230 Fourth Ave., N., 3d Fl.
Nashville, TN 37219-8888

D. Billye Sanders, Esquire
P. O. Box 198866
Nashville, TN 37219-8966

Fred L. Terry
General Manager
Highland Telephone Cooper
P. O. Box 119
Sunbright, TN 37872

Michael Romano
Mark Pasko
Swidler & Berlin
3000 K. St., NW, #300
Washington, DC 20007-5116

Proctor Upchurch, Esquire
P. O. Box 3549
Woodmere Mall
Crossville, TN 38557-3549

Sheila Davis
Chaz Taylor, Inc.
3401 West End Ave., #318
Nashville, TN 37203

James W. Dempster, Esquire
Ben Lomand Rural Telephone Co-opp.
P. O. Box 332
McMinnville, TN 37111-0332

Kim Lynnora Kirk, Esquire
TN Dept of Environment
312 Eighth Ave., N.
Nashville, TN 37243-1458