GTE's analysis of its company-specific power costs shows that the power investment required to provide the power to operate GTE's central offices in all areas is 3 to over 6 times *greater* than the levels proposed by the FCC.

It is clear that the levels of power investment and costs experienced by companies in the telecommunications market today far exceed those proposed by the Commission. The power costs and investments that should be included in the Model are those that are actually being experienced by the ILECs.

4. DLC Circuit Line Offset (¶ 181).

If actual switch investment is used, then GTE agrees that there is no evidence to support a DLC line circuit offset. Any cost savings will already have been reflected in the switch investment figures, and it is inappropriate for the Model to reflect hypothetical future savings based on the subjective belief that there will be more DLC deployed in the future.

However, the Model should account for the costs that result from the design of a network with loops that do not adhere to the industry's Customer Serving Area ("CSA") standard (because it allows a maximum copper loop length of 18,000 feet rather than 12,000 feet), but with switch investments that reflect the CSA standard of 12,000 feet. This mismatch means that switch investments will reflect more savings from DLC than exist in the loop plant. This is because the loop design will favor the use of copper loops between 12,000 and 18,000 feet. To fix this, the switch investments should be increased to reflect the additional analog line units required to handle the additional copper (analog) loops.

5. Switch Costs As A Linear Function Of Line Numbers (¶¶ 164-165).

The FCC has incorrectly specified the equation used to estimate switch costs by ignoring the differences in per-line costs that exist between host and remotes. These differences are due to price varying structures [traffic sensitive (usage) vs. non-traffic sensitive (per-line costs)] among vendors. The omission of these factors in the equation leads to biased coefficient estimates that are useless as cost model inputs.

The NRRI Study found that host and remote switches have different per-line and different fixed costs.[87] This finding results from analysis of a single regression on a data set that combines hosts and remotes. GTE has analyzed the data set used in the NRRI Study and confirmed that there are statistically significant differences between both traffic sensitive and non-traffic sensitive costs between vendors.

The variable per-line cost associated with a host and remote switch from the same vendor may be approximately the same, but will differ depending on the switch vendor. For example, it is GTE's experience that Lucent switches have higher traffic sensitive costs and Nortel switches have higher non-traffic sensitive costs. A Nortel switch includes investments in a "line drawer" that contains a line card associated with each individual line. The line port appearance in a Lucent 5E digital switch is contained on a grid board with multiple additional line ports. It is reasonable to assume that the investments associated with line ports would differ between the two vendors. The FCC should consider the difference in line related investments between these two vendors, as well as the relevant line port investments of all switch vendors when determining line port costs. If the Model is to generate a reasonable, representative universal service

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[87] NRRI Study, Chapter 3, p. 99.

cost, then additional switch-specific investment data are necessary in order to properly account for differences in investments (between the vendors) due to switch design.

An examination of the results in Appendix E (summarized below in Table 3) demonstrates that none of the explanatory variables, with the exception of lines/time and host/time, are statistically significant. Because the coefficients are biased, they can not be used to develop cost model inputs. It is GTE's experience based on actual switch vendor contracts that the switch cost per line is not a linear function of the number of lines connected to the switch.

Table 3
Switch Cost Per Line Is Non-Linear

Parameter	Constant	Lines	Host	1/time	Lines/time	Host/time
Estimate	96,610	(13.09)	(299,800)	1,262,000	1,399	8,288,000
Standard Deviation	91,160	35.40	521,700	838,300	298.5	3,949,000
t-Stat	1.06	(0.37)	(0.57)	1.51	4.69	2.10

6. Switch Upgrade Costs (¶ 171).

GTE believes that the cost of initially purchasing a switch should include an adjustment for growth due to an increase in demand over time. This approach would be consistent with the prices paid for the new switches. Switch vendors typically offer a discount on new switch purchases in anticipation of selling additions to the switch at a greater profit at a later date. If a vendor cannot expect to earn future revenues from selling additions to its switch, then the initial switch price will increase. If this additional price is not included in the input for the cost of the switch, then the cost would not be representative of what is actually paid in the long run.

7. Use Of The LERG To Model Host-Remote Relationships (¶ 177).

The Local Exchange Routing Guide ("LERG") is a valuable source of information on host-remote relationships and special characteristics (such as survivability) that allow remotes to be classified as pair gain or switching devices. A shortcoming of the LERG is that locations are entered as Vertical and Horizontal ("V&H") coordinates that, on occasion, do not accurately translate into latitude and longitude coordinates.

The LERG, owned by Telecordia Technologies (formerly known as Bellcore), is updated and maintained by each local telephone company and is subject to variations in accuracy from field to field depending on the importance of the information in the field. An alternative to the LERG is the National Exchange Carrier Association ("NECA 4") wire center database that is currently used by GTE in conjunction with the Central Location On-Line Entry System ("CLONES") database, also owned by Telecordia Technologies.

Based on GTE's experience with wire center databases, GTE recommends against using data taken directly from any source that has not been completely reviewed and validated for accuracy. The ideal source of inputs for wire centers and host-remote relationships would be a file generated by each company and presented to the group administering the Model. Such a file could be easily reviewed using the LERG and any differences documented, as the need arises.

8. Switch Capacity Constraints And Switch Port Administrative Fill (¶ 186).

The FCC notes that the proposed switch port administrative fill factor of 94% has been adopted in several state universal service proceedings and is supported by the

Georgetown Consulting Group, a consultant of BellSouth.[88] The Model defines this administrative fill "as the percent of lines in a switch that are assigned to subscribers compared to the total equipped lines in a switch."[89] This, in fact, is a definition of switch fill factor; administrative fill is the trigger point at which additional lines are added to a switch to prevent denial of service. Administrative fill cannot be maintained in the long run for any switch because as soon as this threshold is reached, lines are added to the switch and the fill factor immediately drops.

A more appropriate fill factor is the actual switch utilization factor. The 94% administrative fill is significant only as a "trigger" for an ILEC's engineering department to place a capacity addition in a central office switch to avoid call blockage or a lack of switch ports to accommodate incremental demand. The FCC should consider requesting either actual ILEC utilization levels or use an average switch port utilization level in the Model. Average utilization is derived by determining the fill rate for a switch where a capacity addition has just been placed (e.g., 70%) and the utilization of a switch just prior to a capacity addition (94%). The average of those two values is the average switch port utilization of the ILEC's total network (i.e., (70% + 94%) / 2 = 82%). The difference in actual ILEC utilization level across the entire switch network and the derived average utilization level should be minimal at any given point in time.

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[88] FNPRM at ¶ 186.

[89] FNPRM at ¶ 184.

9. Installed Investment For Interoffice Transport Inputs (¶ 150).

GTE does not agree with the installed investment inputs for the interoffice transport elements because they are considerably understated. GTE's estimate of installed investments for the OC-48 is in excess of $100,000. Since an ILEC would install an OC-12, the OC-48 element equipped with only 12 DS-3s does not make sense. The FCC has stated that, with regard to switches, it does not wish to consider incremental capacity additions.[90] Applying that parameter to interoffice equipment, an OC-48 equipped with only 12 DS-3s (25% capacity) should not be used. The installed investment for an OC-12 and an OC-3 should be used instead, which results in efficient utilization.

10. STP Ranges (¶ 150).

The default inputs listed in Appendix A to the FNPRM do not meet GTE's requirements. GTE uses multiple vendors for STPs. Each vendor has a different STP link capacity. The average STP link capacity of the three vendors used by GTE is 480 ports, not 720 as the default input indicates. Also, when GTE deploys additional STPs in the network, it is due to reasons other than exhaustion of an existing STP.

The number of STPs in GTE's network is determined by the need to place an STP closer to an end office to offset the cost of providing SS7 links over excessively long distances, as opposed to STP link capacity exhaustion. This means that more STPs will need to be deployed than total link demand dictates, and that the STPs will be much smaller than the available capacity.

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[90] FNPRM at ¶ 170.

Again, GTE recommends that the FCC use company-specific data to develop STP inputs, because the proposed inputs do not reflect the costs that a carrier would incur to provision STPs.

C. Expenses.

1. Nationwide Expense Estimates Are Inappropriate (¶¶ 198, 214-218).

As with the proposed outside plant and switching inputs, GTE does not agree with the FCC's tentative conclusion that operating expense input values should be based on national averages for non-rural carriers. Using national average operating expenses will either understate or overstate the forward-looking costs of providing universal service for each carrier, depending on the variability of each company to the average. In contrast, using company-specific expense inputs will yield accurate, reliable estimates of forward-looking costs, ensuring that all carriers receive accurate and sufficient funding.

The FCC staff justifies use of a national average for expenses because it did not find any variations in plant specific ARMIS expense data among carriers. Since the staff's analysis and the data it reviewed could not be located at the FCC Website,[91] it is difficult to comment on or explain the alleged absence of variation. However, it appears that the analysis was based on an aggregated data set that would not reveal any expense variations. When lines are aggregated for a company that operates in several states, expense variations disappear. GTE analyzed the expense data of its individual operating companies and found significant variability. But when this information was

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[91] FNPRM at ¶ 201, n. 370.

aggregated for the entire GTE holding company, the variations were negated.

A review of single source provider contract data for the individual companies in each of GTE's states confirms that there are significant variations for single expense activities. Even within a state, the costs for a particular task often vary by geographic area. This variability reflects operating difficulties due to terrain, remoteness, cost of labor, and other relevant factors. Contractors are aware of these factors and develop their bids to capture them. Although it may be difficult to analyze some data due to the fact that companies have not been required to maintain a sufficient level of detail in their publicly available financial records, the variations among states can certainly be incorporated by using company-specific data. As with outside plant placement costs, these variations significantly affect operating expenses.

GTE disagrees with the FCC's tentative conclusion that "the use of national or regional averages for input factors is more consistent with the forward-looking nature of the high cost model because it mitigates the rewards to less efficient companies."[92] The fact that a company's costs are higher than the supposed "national average" does not mean that the company is inefficient. Such a presumption is wholly unjustified, in fact, since federal and state regulators have heavily scrutinized company expenditures for decades, and adopted incentive regulation plans that reward a company for increased efficiency. The rationale that average values mitigate the effects of the "inefficient" company simply penalizes efficient companies that operate in high cost areas. It does not recognize that it is more expensive to serve some areas because of demographics

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[92] FNPRM at ¶ 198.

or geographics. This is a significant flaw because the companies in these high cost areas are the ones that are most in need of universal service support.

Developing company-specific expense inputs would not only be more accurate, but also less burdensome. Most operating expense and book investment information is readily available from the FCC's Internet site. To the extent a company has not filed ARMIS information, or the necessary ARMIS information is not available, this information can be requested by the Commission. The FCC's Part 32 chart of accounts serves as the guide for all telecommunication company financial record keeping, and most companies are required to provide similar types of information, in either FCC Form M reporting or similar state reporting requirements. To the extent that the FCC requires more detail than is available from these sources, a request for specific information can be submitted. In the end, a company should be subjected to a cost averaging methodology only if it fails to produce the data sought by the Commission. This would place the burden upon each company to provide specific data to the FCC and is similar to the current universal service mechanism.

2. Regional Wage Rate Differentials Are Important Cost Considerations (¶¶ 199-200).

As suggested in the Notice, there is a significant variation in regional wage rates. A review of GTE's company and state specific labor rates for outside plant and central office technicians indicate that there can be as much as a 36% difference in the hourly wage rate among states for the same job. The FCC's proposal incorrectly suggests that there is no difference in the economies of scale, operating costs, labor and benefit costs between, for instance, a company that operates in Los Angeles and another company that operates in Iowa. Significant variations in operating expenses exist because of

geographic and demographic effects upon the demand for wages, benefits, rents, and other operating expenses. A region's cost of living has an effect on salaries, wages, and operating expenses. The collective bargaining power of the respective unions, if any, also affects the labor and benefit costs of a company. Employees with telecommunications skills are increasingly in demand, which ultimately affects the cost of labor and benefits. These are but a few factors that have a specific effect on the operating expenses incurred in any market. These differences are reflected in the company-specific data that are available from ARMIS, FCC, and state commission filings, and should be reflected in the Model's inputs.

GTE does not agree that using "indexes calculated by the President's Pay Agent for calculating locality pay differentials for Federal employees"[93] would be an appropriate way to account for wage rate differentials. These indexes are designed for a specific labor sector -- federal employees -- and are not relevant to the telecommunications industry. There are, however, numerous publicly available sources of labor statistics that measure the cost of living and other factors that drive operating costs. If an index factor were adopted, it would need to be specific to the telecommunications industry and not one that has been designed for a specific group or unrelated industry, such as federal employees.

3. Plant Specific Operations Expenses (¶¶ 202-208).

GTE agrees with the Commission's tentative conclusion that input values for each plant specific operations expense account can be calculated as the ratio of booked

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[93] FNPRM at ¶ 200, citing *Report on Locality-based Comparability Payments for the General Schedule,* Annual Report of the President's Pay Agent, Appendix II, 1995.

expense to current investment, but only if this calculation is performed on a company-specific basis. Proper development of plant specific operating expense factors by plant account type will have the effect of adjusting operating expenses with the changing mix in plant investment, and thus will automatically align the levels of operating expenses with the plant investment that is developed by the Model.

Expense-to-investment ratios should not be developed as "national averages" because no national average can reflect the composition of each company's market demographics and plant. For example, GTE applies the C.A. Turner Index for each account to the vintage composition of the embedded plant. Even within GTE, the index varies from state to state as the mix and vintage of the embedded plant varies. GTE calculates a state-specific index for each of its state filings using the C.A.Turner Index. This reflects state-specific and regional effects of each operation. An average of all GTE companies as a whole would distort the result for individual GTE companies and study areas.

The FCC's current proposal is even worse since it develops a composite index for each account by averaging data from GTE and four Bell companies. These indices are not representative of any company in a study area. In addition, there is no indication which index each company used to calculate their current-to-book ratios, or how they were applied. Inconsistent indices and methodologies among these companies can lead to non-comparable results.

GTE agrees with the FCC that the most current year's ARMIS data also should be used (1997). The Commission should always rely on the most currently available data to perform its analysis.

4. GSF Investment Costs (¶¶ 210-211).

GTE believes that the forward-looking way to calculate a General Support Facility ("GSF") investment ratio is to convert all ARMIS investments to current values using current-to-book ratios. After doing this, an adjusted ARMIS GSF to total-plant-in-service investment ratio can be calculated. GTE agrees with the Commission that a reduction to the preliminary estimate of GSF investment should not be based on the same factors used in the HAI Model.

The FNPRM states that the "model's preliminary estimate of GSF investment should be reduced, because only a portion of GSF investment is related to the cost of providing the services supported by the federal mechanism."[94] The Model's methodology to allocate the amount of GSF investments to universal service, however, has several problems.

First, it is unclear why only expenses for customer operations, network operations, and corporate operations were included in the allocation calculation, and not plant specific expenses. This omission presupposes that only customer operations, network operations, and corporate operations use general support facilities. In fact, plant specific operations also use GSF investments, and should therefore be counted in the calculation.

Second, the calculation of the universal service share of these expenses is based on the local portion of expenses derived from a regression that uses a wrong

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[94] FNPRM at ¶ 211.

specification to allocate the local portion of the total expenses, as discussed below in Section V.C.6, at pp. 79-82.[95]

Third, the determination of the universal service portion of the local service expenses is based on incorrect exclusion of many of the expenses, as discussed below in Section V.C.7, at p. 82.[96]

Fourth, the calculation of the allocator itself is flawed because the numerator is a *simple* average of expenses derived from the regression results, but the denominator is a *weighted* average of total expenses developed from ARMIS data. The type of "average" in the numerator and denominator should match.

In view of these errors, the allocator used in the Model is incorrect and needs to be recalculated.

5. Common Support Service Expenses -- Per-Line Basis (¶¶ 212-213).

GTE agrees that operating expenses associated with common support services can be calculated on a per-line basis, but it should be done on a company-specific basis. The information necessary to perform these calculations is available from ARMIS on a company and state-specific account basis.

The Model's common support service expenses are developed on a per-line basis, but the input values are, once again, nationwide estimates. The rationale for using nationwide estimates is the inability of the Commission staff to find differences

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[95] *Id.* at ¶ 214.

[96] *Id.* at ¶¶ 224, 225.

based on physical plant or geographic differentials. Since the details of that analysis are not provided, it is not possible to comment on staff's findings.

6. Regression Methodology (¶¶ 217-219).

The "standard economic analysis" described in the FNPRM suffers from two fatal flaws that render it useless for the purpose of allocating a portion of marketing, corporate, customer operations and plant non-specific expenses to universal service support. First and foremost, the regression approach is not grounded in microeconomic theory. Without a theoretical foundation, this analysis cannot allow one to draw conclusions and claim that any such conclusions have economic value. Second, the way in which the regression analysis was conducted indicates that a number of fundamental econometric principles have been violated. For these reasons, the proposed regression methodology should be abandoned.

Yet another obvious error is that the FCC's proposed regression equations ignore local minutes of use as a relevant explanatory variable. In the FCC's specification, only switched lines, special access lines and toll Dial Equipment Minutes ("DEM") per line are used as explanatory variables. The FCC did not use local DEM because it found a high correlation between switched lines and local DEM. In view of the high correlation between toll DEM and local DEM per line, it is not surprising that the toll DEM per line in the FCC proposed regression appears to be correlated with variations in expenses related to local DEM per line. A more correct specification would have included switched lines, special access lines and *total* DEM per line.[97] Moreover,

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[97] The FCC's regression also wrongly assumes that all costs are captured by the variables in the Model. Variations in costs among companies operating in diverse

the FCC's specification contradicts the FCC's Universal Service Order, which states that "usage of, and not merely access to, the local network should be supported,"[98] because it does not explicitly reflect the impact of local usage.

To demonstrate the impact on the resulting cost allocations of using only toll DEM in the FCC's regression equation, GTE has re-estimated the FCC equations using total DEM in place of toll DEM. The percent share of per-line expenses that should be allocated to universal service based on the revised regression results for switched lines and local DEM shares is shown in Table 4. For comparison, the FCC's proposed share for universal service is also included.

TABLE 4
Cost Allocations
Based On Revised Specifications

Account	FCC	Revised Specification
6610	2%	3%
6620	31%	72%
6700	51%	95%
6510	274%	173%
6530	47%	86%

A comparison of the revised results in the above table to the FCC's proposal clearly reveals the sensitivity of the results to the equations' specification. In Account

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geographic areas with different demographics, plant mixes and systems are not even addressed in the FCC's proposed specification.

[98] Universal Service Order at ¶ 65.

6620-Customer Operations, for example, the Model allocates only 31% of customer operations expenses to universal service. The revised specification would allocate 72% of customer operations expenses to universal service, which is close to what other methodologies would show, such as an allocation based on shares of local and toll traffic.

At best, the FCC's proposal appears to be an attempt to estimate a set of average cost functions that utilizes only the mix of output as explanatory variables. It excludes, and therefore cannot account for, variables related to differences in input prices or the underlying production functions. On its face, this proposal is inconsistent with the FNPRM's attempt to construct cost inputs on the basis of differences in input prices and production functions that are driven by the size of the companies involved and by the characteristics of the individual serving areas. Because the FCC's proposed average cost functions exclude important variables related to differences in input prices and production functions, they are misspecified. As a result, the coefficient estimates for the remaining variables are biased and cannot be relied upon.

Another consequence of the misspecification and omitted variables is the extremely low predictive ability of the equations, as measured by the R^2s. The FCC has not reported the average cost equations, but GTE has replicated the results for both of the specifications for each account. Although one would expect to see lower R^2s in cross-sectional studies, the R^2s for the FCC equations range from a low of 0.078 to a high of only 0.343, which are low even for cross-sectional studies. By comparison, the R^2s measures of the equations (excluding that for aerial drops) contained in the NRRI Study ranged from 0.413 to 0.903.

One reason that the FCC's estimated average cost functions fail to measure up to established econometric standards is the substantial differences in the reported accounting data between companies. For example, directory costs within GTE are booked as a contra-revenue rather than an expense. As a result, the expenses booked in Account 6620 for GTE would be lower than other companies. Use of DEM can also be problematic because the size of the company can affect DEM. Part 36 includes a DEM "weighting" factor, which is designed to arbitrarily shift costs and can distort the relationship between DEM minutes and reported costs.

It is clear that the Commission's proposal to estimate expenses based on a regression methodology is flawed because it is not supported by either the existing data or econometric theory.

7. Removal of One-Time and Non-Supported Expenses (¶¶ 220-222).

GTE agrees that the Commission should not attempt to adjust proxy costs for one-time, non-recurring and non-supported costs. The detail necessary to make these adjustments is not readily available at the individual account level from public information such as ARMIS or other public company financial reports. If any adjustments are made, the Commission must consider not only adjustments that decrease operating expenses, but also adjustments or exogenous events that may increase costs, i.e., wage increases, FCC mandates, Financial Accounting Standards Board notices, etc. Unless companies implement specific tracking mechanisms, these data are not generally or easily identified after the fact. Company-specific cost adjustments would have to be requested from each company annually, since they can vary significantly from year-to-year and from company-to-company.

8. Marketing Expenses (¶ 224).

The FCC's marketing expenses input is obtained after reducing the total per-line marketing expenses by 95.6%. A paper by Economic and Technology, Inc. ("ETI"), an AT&T contractor, is cited as the only source for this reduction. ETI's analysis concluded that of the sub-accounts that constitute ARMIS Account 6610 (6611, 6612, and 6613), the universal service portion should be restricted to only 16% of Account 6611, and none from the other two accounts. Use of ARMIS inputs for the three sub-accounts along with the above recommendation leads to only 4.4% of the marketing expenses being allocated to USF.

An examination of the ETI paper reveals that its conclusions are based only on biased judgment and flawed assumptions. The alleged basis for excluding 84% of Account 6611 expenses and all expenses in Accounts 6612 and 6613 is that these expenses primarily relate to business customers. But, at present, single line business are covered by the federal mechanism along with residential customers. ETI excluded advertising expenses in Account 6613 since, in its judgment, the advertising in account 6613 was not of an instructional nature, and advertising was not necessary for primary basic local exchange service. This conclusion conflicts directly with Section 214 of the Act, which requires eligible telecommunication carriers to advertise the availability of residential local exchange and universal service supported services.

Marketing expenses support all GTE products and services, and part of them should be assigned to the cost of universal service. In addition, marketing expenses incurred specifically to promote basic residential and business services should be

included in their entirety.[99] In a competitive environment, all companies advertise. Furthermore, several states have indicated that LECs receiving support must advertise the availability of supported services. It is, therefore, reasonable to expect that GTE will require at least the same level of advertising expense as it incurs today, and should be able to recover these costs from the services it provides, including supported services.

9. Adjustments for Other Non-Supported Services (¶ 225).

The Commission should make no adjustments for non-supported service costs related to coin operations and collections, published directory, access billing, interexchange carrier office operation and service order processing because the proposed methodology can result in distorted results depending on the time period selected and the accounting policies of the company.

For example, removal of public directory expenses poses a problem for GTE because those expenses were never in Account 6621-Number Services.[100] In addition, a fraction of expenses in Account 6623 removed to adjust for coin, access billing, and other expenses is removed twice since the regression would already have taken them out while subdividing the expenses among switched lines, special access lines and toll minutes.

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[99] *See* Universal Service Cost Model Docket, Sprint *Ex Parte*, December 22, 1998 ("it is appropriate to recover specific marketing expenses associated with the provision of basic local service through an explicit universal service fund").

[100] FNPRM at ¶ 219.

D. Capital Costs.

1. Depreciation (¶¶ 231, 234-236).

The Model should use straight-line depreciation for ease of implementation, and should include economic lives rather than physical lives because economic lives properly reflect the effect of competition.

A simple example will help illustrate this point: a 286 computer built in 1994 may have a *physical* life of ten years, but an *economic* life of only two years. Thus, a manufacturer could never recover the capital costs associated with its 286 computers over a ten-year period -- the market simply would not permit it. Similarly, the market will not permit telecommunications companies to recover their capital costs over the physical life of their facilities. This common sense principle requires that depreciation expenses be calculated using *economic* lives rather than physical lives. Economic lives reflect the effects of competition, and thus more accurately align the cost of given facility with the period of time over which the facility can generate revenues sufficient to cover its cost.

The longer depreciation lives recommended by the FCC are inappropriate because they do not accurately reflect the effects of competition. Indeed, the FCC has admitted that competition is not one of the factors it considers when estimating the life of investment: "Commission authorized depreciation lives are not only estimates of physical lives of assets, but also reflect the impact of technological change and forecasts of equipment replacement." [101] Given this, the FCC's proposed lives are not reasonable estimates of economic lives.

GTE recommends that its financial reporting lives be used as economic lives. Alternatively, the FCC could establish a range of economic lives based on the financial reporting lives of *all* companies that provide telecommunications services, including those companies that are not regulated and that do not report their depreciation lives to the FCC.

Furthermore, the FCC continues to assume that the rate of retirement of an asset is related to its economic value. This assumption is erroneous. The economic value of an ILEC's investment is not dependent upon the asset-retiring plans of any particular ILEC. Rather, the economic value is affected by the growing number of alternatives to the ILEC network, such as CATV networks, wireless networks, and inter-exchange carrier networks. Indeed, there can be no doubt that the developing telecommunications infrastructure will include, for example, CATV networks. AT&T has committed billions of dollars to provide local phone service over its own network by acquiring companies such as Teleport Communications Group and Tele-Communications, Inc., by committing to purchase MediaOne Group, Inc., and by partnering with Time Warner, Microsoft, and other companies. As customers migrate to other networks and other forms of telecommunications, the value of the ILECs' network will be significantly reduced even though the network may not be officially "retired." Thus, an ILEC may have a retirement rate of 4%, but this rate has nothing to do with the economic value of the ILEC's network. For all these reasons, the FCC's proposed depreciation lives are inappropriate and must be adjusted.

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[101] FNPRM at ¶ 232.

2. Annual Charge Factors (¶¶ 240-242).

The Model defines annual charge factors as the sum of depreciation, cost of capital, adjustments to include taxes on equity and maintenance costs. These factors are developed using national averages for the cost of capital, taxes, depreciation lives, and expense-to-investment ratios for the relevant accounts.

The Model's loop module uses these annual charge factors to determine costs for optimization decisions. Once the outside plant investments are determined in the loop and switch-interoffice modules, the annual charge factors are calculated in the expense module using the HAI Model methodology. However, this calculation does not use the annual charge factor inputs that were used during the optimization of costs. As per the HAI Model, the capital carrying costs in the Model are calculated as the sum of capital carrying cost that includes depreciation, cost of capital, and adjustments to include taxes on equity. Maintenance costs are then added to get the total cost. While the cost of capital, taxes, and depreciation lives use national averages, not all of the expense-to-investment ratios used for calculating maintenance costs are defined as such. Thus, the aerial structure, underground structure and manhole accounts use expense-to-investment ratios that are calculated for each company using ARMIS data. Therefore, an inconsistency exists between the costs calculated during the optimization phase in the loop module and the costs finally calculated for each company in the expense module for the three accounts.

To make the cost calculations in the optimization phase and expense module comparable, the annual charge factors should be company-specific. The only company-specific factors in the annual charge factors are the expense-to-investment ratios. Since these can be calculated using the ARMIS data before running the Model,

there should be little difficulty in making the annual charge factor inputs company-specific.

3. Use of Productivity Factors is Inappropriate (¶¶ 209, 226).

The FCC's proposal to use productivity factors to adjust plant specific maintenance factors and common support service expenses is not appropriate.[102] If the most current, company-specific ARMIS data are used to develop these inputs, no productivity adjustments are necessary.

The Commission's proposal to bring forward the 1996 data relied upon for estimating common support service expenses should not be adopted. The District of Columbia Circuit Court of Appeals' recent rejection and remand of the X-factor of 6.5% precludes its use as the method to bring forward the 1996 data.[103]

The Commission should not use a net reduction of 3.888 and 3.8571 for 1997 and 1998 respectively when current ARMIS data for 1998 could be used for the common support service expenses as well as the aforementioned current-to-book ratios for plant specific expenses.

VI. GTE'S COMMENTS ON OTHER UNIVERSAL SERVICE ISSUES

A. Alternative Methodology to a Forward-Looking Cost Model.

In the FNPRM, the Commission seeks comment on whether an alternative should be adopted in the event that the Commission's cost model is not ready in time

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[102] FNPRM at ¶¶ 209 and 226.

[103] *United States Telephone Ass'n v. FCC*, Case No. 97-1469, 1999 U.S. App. LEXIS 9768, at *5-12 (D.C. Cir. May 21, 1999).

for implementation of the federal universal service mechanism on January 1, 2000.[104] GTE suggests that all alternative is available for high cost support.

The alternative is simply to compare the level of telecommunications revenue across study areas. Variation in revenue across states should be closely correlated with variations in cost. GTE therefore proposes that the Commission construct a measure of the average revenue per line for each ILEC serving area, based on appropriate regulated revenue streams, e.g., state and interstate access, basic local, toll and vertical services. This measure will account for all of the current sources of implicit support that have been used at both the state and federal level. This measure also avoids the difficult – and ultimately unresolvable – issues surrounding the attribution of cost.

The resulting measure would not necessarily represent either "forward-looking" or "embedded" cost. Rather, it would reflect the level of recovery that has been permitted by the relevant state authorities and by the Commission, using whatever method of regulation has been found to be most reasonable. In the case of the Commission, price cap regulation has been used for nearly a decade with respect to interstate access revenues. Similarly, many states have also adopted some form of incentive regulation. It is reasonable that the measure of cost used for determining the support mechanism for telecommunications rates should be consistent with the level of cost recovered by the rates themselves, taken in the aggregate for a given area. Further, the surrogate measure of cost derived in this way is less likely to exhibit arbitrary swings from one area to the next than would the numbers produced by either

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[104] FNPRM at ¶ 243.

the allocation of embedded cost or the vagaries of the cost model. Finally, this alternative measure could readily be constructed using currently available data. Once this measure has been developed for each study area, a comparison to the nationwide mean could proceed for the purpose of determining support necessary to maintain reasonable comparability.

GTE has argued above that universal service support should be determined on a deaveraged basis. For the purpose of assessing the federal funding that is needed to maintain reasonable comparability, GTE has suggested that the UNE zones established by the states, which will generally be aggregations of homogeneous wire centers, are reasonable geographic areas. The relative levels of the UNE rates in each zone could be used for this disaggregation. Until the appropriate UNE zones have been set by the state, the study area can be used in the interim The result would be a set of geographic zones in which the total revenue, across all zones, would be the same as the study area revenue, while the relative level of the average revenue per line for high cost support determination between any two zones would be the same as the ratio of the UNE rates in those zones.

This approach would allow the Commission to develop a consistent, reasonable surrogate measure of cost at the zone level for purposes of the universal service calculations proposed in the Seventh Report and Order.[105]

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[105] In the Matter of Federal-State Joint Board on Universal Service, In the Matter of Access Charge Reform, CC Docket 96-45, *Seventh Report & Order* and *Thirteenth Order on Reconsideration*; CC Docket No. 96-262, *Fourth Report & Order*; CC Docket Nos. 96-45, 96-262, *Further Notice of Proposed Rulemaking*, FCC 99-119 (rel. May 28, 1999), at ¶¶ 102-109.

B. Portability of an Explicit Fund.

For each study area, wire centers with above-average costs based on the forward-looking cost model outputs would receive support based on the relative weighting to all other wire centers with above-average costs in the same study area. This would allow the resulting explicit support to be targeted to individual wire centers and made portable to the eligible telecommunications carrier that wins the end-user customer.

C. Proposed Modification to Procedures for Distinguishing Rural and Non-Rural Companies.

GTE offers the following comments on various issues related to the rural and non-rural designations.

1. Annual Filing Requirements for Carriers Serving Less Than 100,000 Access Lines.

GTE agrees that, in the future, a carrier serving less that 100,000 access lines should not be required to file the annual rural certification unless its status has changed since its last filing. On a prospective basis, carriers must continue to review annually their study area status to ensure qualification. A status change may occur due to access line growth or potential demographic changes identified in the most recent listing of metropolitan areas published by the Office of Management and Budget ("OMB"). The Commission would eliminate administrative costs for itself and for carriers by requiring that changes be communicated only on an annual basis. The Universal Service Administrative Company ("USAC") should post these changes to the current database maintained for all local exchange carriers and publish the results.

2. Definition Of "Local Exchange Carrier Operating Entity."

GTE has interpreted the meaning of the phrase "local exchange carrier operating entity" to mean a study area and has previously filed for rural certification based on this interpretation. Should the Commission clarify or change this definition to mean something other than a study area, carriers should be required to re-file rural exemptions for universal service support commencing on January 1, 2000. A change in the meaning of "local exchange carrier operating entity" could alter the current study area reporting for companies under 100,000 lines, as well as for companies exceeding this threshold. A definitional clarification in the meaning of "communities of more than 50,000" also could potentially alter the rural status of companies exceeding 100,000 lines qualifying as rural under Section 153(37)(D) of the Act.

The phrase "local exchange carrier operating entity" in Section 153(37) of the Act is a new term not previously used in regulatory proceedings. As mentioned previously, GTE interpreted the phrase "local exchange carrier operating entity" to mean a study area. The study area is the appropriate service area for "rural exemption filings" due, in part, to FCC guidelines prescribed in Part 54.207(b), which specify that a rural telephone company's service area is a study area.[106]

In addition, Section 153(37) of the Act identifies the criteria for determining rural status. Two of the four criteria included in this section use the term "study area" to describe applicability:

> (A) provides common carrier service to any local exchange carrier study area that does not include either...

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[106] 47 C.F.R. § 54.207(b), Service Areas at p.8.

(i) any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics from the Bureau of the census; or

(ii) any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993;

(C) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines.[107]

If a holding company definition were used to define rural status, the Act would have been amended to strike the term "study area" in the above-cited paragraphs.

3. Section 153(37)(D) of the Act Needs Clarification, But Not Section 153(37)(A).

GTE concurs with the Commission that Section 153(37)(A) of the Act can be applied consistently without additional information. This provision states explicitly that a "study area" can not include either an incorporated place of 10,000 inhabitants or any "urbanized" area, as defined by the Bureau of Census as of August 10, 1993. This meaning is self-explanatory and administratively easy to implement. However, Section 153(47)(D) -- study areas with less than 15% of their lines in communities greater than 50,000 -- is more difficult to determine and needs clarification by the Commission.

4. The Definition of Rural Telephone Company In Sections 251(f)(1) and Section 214(e)(2) Has Been Interpreted Consistently.

It has been GTE's experience that state commissions have defined the term "rural telephone company" consistently in exercising their authority under Sections

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[107] 47 U.S.C. § 153(37) ("rural telephone company" is defined as local exchange carrier that: serves study area that does not include any incorporated place of 10,000 inhabitants or more or any urbanized area; serves fewer than 50,000 access lines; serves study area with fewer than 100,000 access lines; or has less than 15 percent of its access lines in communities of more than 50,000 on date enactment of Telecommunications Act of 1996.)

251(f)(1) and 214(e)(2) of the Act. When determining whether or not a company is rural for interconnection purposes, the definition was not at issue. The issue was whether interconnection was unduly burdensome and technically feasible. Most state commissions did not consider any GTE study areas rural for interconnection purposes. However, as this Commission acknowledges, numerous GTE study areas are rural for interstate high cost funding.[108] More confusion arose because many states did not make a distinction between rural and non-rural for state universal service purposes. In other words, a state where GTE has only one study area may be rural for interstate universal service purposes, but may be considered non-rural for state purposes. For example, GTE Midwest -- Nebraska is considered rural for interstate high cost funding and non-rural for state universal service funding. Despite this difference in classification, the distinction did not create a problem when determining each jurisdiction's need for funding.

5. Linking "communities of more than 50,000" with Metropolitan Statistical Areas ("MSAs").

GTE believes that a community is linked to a MSA. Consistent methodology and source of demographic data are imperative to properly determine whether a study area qualifies under Section 153(37)(D) of the Act. There are various ways to interpret the term community and absent a specific Commission methodology, carriers have more than likely interpreted and applied various criteria when filing for "rural exemptions."

OMB defines a metropolitan area (urban) as consisting of at least one central city of an approximate size (usually at least 50,000), its surrounding "suburban" territory

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[108] Universal Service Cost Model Docket, Self-Certification as Rural Telephone

within the same county, and any adjacent counties with strong economic ties to the city. National MSA statistics posted on the Schools and Libraries Division Internet Website are easily accessible and provide a consistent definition of a community.[109] In addition, the Goldsmith modifications (referenced in the Website) are also included to identify rural areas within large metropolitan counties. As a result, Goldsmith modifications remove certain rural tracts associated with a particular MSA from being designated as metropolitan.

GTE's interpretation is substantiated by two sources. First, the Schools and Libraries Division of USAC implemented these same criteria to determine "rural" or "urban" eligibility for the Rural Health Care Program. Every metropolitan area and associated county is listed on their MSA Table. If a particular county is not shown on the MSA Table, it is deemed rural. Carriers must assign each wire center to its appropriate MSA to determine rural designation. Second, the Commission also defined rural area in Part 54.5 as follows:

> Rural area. A 'rural area' is a non-metropolitan county or county equivalent, as defined in the OMB Revised Standards for Defining Metropolitan Areas in the 1990s, 55 FR 12154 (March 30, 1990), and identifiable from the most recent MSA list released by OMB, or any contiguous non-urban Census Tract or Block Numbered Area within an MSA-listed metropolitan county identified in the most recent Goldsmith Modification published by the Office of Rural Health Policy of the U S Department of Health and Human Services.[110]

Company, *Public Notice*, DA 99-459 (rel. March 16, 1999).

[109] Internet Website for Schools & Libraries Fund, http://www.slcfund.org/reference/msa.asp.

[110] 47 C.F.R. § 54.5, Terms and definitions at p. 2.

GTE adopted the MSA as a standard for evaluating the eligibility of a study area serving less than 15% of its lines in communities greater than 50,000 in accordance with Section 153(37) of the Act. The percentage of rural/non-rural lines is calculated by determining whether each wire center is associated with an MSA. The operative question is whether the wire center boundary falls within an MSA. If yes, these lines are considered urban unless the wire center has rural pockets shown by the most recent Goldsmith modification. After each wire center's lines are classified as either urban or rural, the sum of urban lines divided by the total study area lines determines a percent of urban lines. If the urban percent is less than 15%, the study area qualifies as rural. Conversely, the study area is considered non-rural if the percent is 15 or above. For example, GTE Midwest -- Iowa exceeds the 100,000-line parameter specified in Section 153(37)(C) of the Act. However, only 16 of its 96 wire centers are associated or part of the eight MSAs in the state. The percent of these urban lines associated with an MSA is only 9.83% as compared to the total study area lines as of the date of enactment of the Act. Therefore, the lines associated with MSAs are deemed "urban," but the sum of these urban lines do not exceed the 15% parameter and qualifies as a rural study area. Therefore, the phrase "communities of more than 50,000" should be linked to an MSA.

6. Maintaining the Definition for Rural Telephone Companies in Accordance with Section 153(37) of the Act.

The Commission should maintain the definition for rural telephone companies in accordance with Section 153(37) of the Act. It should not reconsider its decision to use the rural telephone company definition to distinguish between rural and non-rural carriers for purposes of calculating universal service support, specifically due to the differences between universal service policies and competitive policies.

As mentioned earlier, the definition was not at issue when carriers were considered rural for interconnection purposes. The definition was applied consistently. It is irrelevant whether or not there is a statutory requirement to distinguish between rural and non-rural carriers for purposes of calculating universal service support. It is this Commission created a chasm between the rural and non-rural carriers for universal service purposes when it issued its universal service order in May 1997, and its subsequent cost model platform order in October 1998. Both the Universal Service Order and the Fifth Report & Order address only non-rural telephone companies and state repeatedly that rural telephone companies should be treated differently for the following reasons: the forward-looking models could not precisely model small, rural carriers' cost; the rural carriers serve fewer subscribers, more sparsely populated areas and do not generally benefit from economies of scale and scope as many of the non-rural carriers; rural carriers cannot respond to changing operating circumstances as quickly as large carriers; etc. In addition, this Commission "guaranteed" that the rural companies would continue to receive support based on the current methodology until at least 2001. Therefore, for over two years, the rural companies did not actively participate in this Commission's cost model proceeding for non-rural carriers with the expectation that a docket would be initiated specifically for rural telephone carriers.

Eliminating the distinction between rural and non-rural carriers for universal service purposes could create significant problems for rural carriers, especially if all carriers are required to use the same cost model. As stated previously, this Commission created the distinction between rural and non-rural carriers due to different characteristics of each type of carrier. Reconsidering the decision to use the rural

telephone company definition to distinguish between rural and non-rural carriers does not eliminate confusion about how the states treat (or treated) carriers for interconnection purposes or for universal service purposes. However, if the Commission changes the definition of rural carrier after two years of universal service filings, a great deal of confusion will arise. For all of these reasons, the Commission should maintain a definition of rural in accordance with the Act regardless of how state commissions define rural/non-rural for competitive purposes.

7. If The Commission Clarifies The Meaning Of "Communities Of More Than 50,000," Carriers Must Recertify For The Period Beginning January 1, 2000.

If a definitional clarification in the meaning of "communities of more than 50,000" alters the rural status of companies exceeding 100,000 lines qualifying as rural under Section 153(37)(D) of the Act, these carriers must re-certify for the period beginning January 1, 2000. On a prospective basis, carriers must review annually the status of their company's qualification. A status change may occur due to demographic changes identified in the most recent listing of metropolitan areas published by the OMB. The Commission would thereby eliminate administrative costs for itself and for carriers by requiring that changes be communicated only on an annual basis.

VII. CONCLUSION

For the foregoing reasons, the Commission should not adopt the input values proposed in the FNPRM. Once the Commission has decided on the final form of the Platform, it should use the available data that have been (or could be) submitted by the ILECs relating to their costs to develop company-specific input values. Because actual

data are available for almost all categories of inputs, there is no need for the Commission to rely on dubious RUS data, regression analyses, and cost adjustment factors. The actual cost experiences of GTE and the other ILECs are the best guide for developing inputs to the Model, and GTE offers its assistance to the Commission in developing these types of input values.

Respectfully submitted,

GTE SERVICE CORPORATION and its affiliated domestic telephone operating companies

By: Thomas W Mitchell

Bernard A. Nigro, Jr.
Christopher S. Huther
Thomas W. Mitchell
Collier, Shannon, Rill & Scott, PLLC
3050 K Street, N.W., Suite 400
Washington, D.C. 20007
(202) 342-8400

Thomas R. Parker
GTE Service Corporation
P.O. Box 152092
Irving, TX 75015-2092
(972) 718-6361

Gail L. Polivy
GTE Service Corporation
1850 M Street, N.W.
Suite 1200
Washington, D.C. 20036
(202) 463-5276

Its Attorneys

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