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May 15, 2001

Arizona Corporation Commission
DOCKETED

MAY 16 2001

DOCKETED BY

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

RE: **ACC Docket No. T-00000A-00-0194**

Dear Sir or Madam:

Please find enclosed an original and ten copies of Sprint's Direct Testimony in the above-reference docket. The confidential version of this testimony was served on Hearing Officer Rodda pursuant to the Procedural Order in this matter. Please do not hesitate to contact me should you have any questions in this regard.

Sincerely,

Eric S. Heath

ESH/st

Enclosure

cc: File

BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
CHAIRMAN
JIM IRVIN
COMMISSIONER
MARC SPITZER
COMMISSIONER

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH CERTAIN WHOLESALE PRICING REQUIREMENTS FOR UNBUNDLED NETWORK ELEMENTS AND RESALE DISCOUNTS	)	DOCKET NO. T-00000A-00-0194

NON-CONFIDENTIAL DIRECT TESTIMONY OF RANDY G. FARRAR

SPRINT COMMUNICATIONS COMPANY L.P.

May 15, 2001

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I. QUALIFICATIONS, RESPONSIBILITIES, AND PURPOSE OF TESTIMONY

Q. Please state your name, occupation, and business address.

A. My name is Randy G. Farrar. I am presently employed as Senior Manager – Network Costs for the Sprint / United Management Company. My business address is 6360 Sprint Parkway, Overland Park, Kansas, 66251.

Q. What is your educational background and work experience?

A. I received a Bachelor of Arts degree from The Ohio State University, Columbus, Ohio, in June 1976 with a major in history. Simultaneously, I completed a major program in economics. Subsequently, I received a Master of Business Administration degree, with an emphasis on market research, in March 1978, also from The Ohio State University.

From 1978 to 1983 I was employed by the Public Utilities Commission of Ohio. In 1980, I was promoted from Financial Analyst to Senior Financial Analyst. My duties included the preparation of Staff Reports of Investigation concerning rate of return and cost of capital. I also designed rate structures, evaluated construction works in progress, measured productivity, evaluated treatment of canceled plant, and performed financial analysis, for electric, gas, telephone, and water utilities. I presented written and oral testimony on behalf of the Commission Staff in over twenty rate cases.

I have been employed by Sprint Corporation or one of its predecessor companies since 1983. From 1983 to 1986 I was Manager - Rate of Return. I presented written and oral testimony before state public utilities commissions in Iowa, Nebraska, South Carolina, and Oregon.

From 1986 to 1987 I was Manager - Local Exchange Pricing. I investigated alternate forms of pricing and rate design, including usage sensitive rates, extended area service alternatives, intraLATA toll pricing, and lifeline rates.

Since 1987, I have held various positions dealing with telecommunications cost issues. From 1987 to 1992 I was Manager - Local Exchange Costing. In 1992 I was promoted to Manager - Network Costing and Pricing. I performed financial analyses for various business cases, which analyze the profitability of entering new markets and expanding existing markets, including Custom Calling, Centrex, CLASS and Advanced Intelligent Network features, CPE products, Public Telephone and COCOT, and intraLATA toll. I was a member of the United States Telephone Association's New Services and Technologies Issues Subcommittee from 1989 to 1992, and the Economic Analysis Training Work Group from 1994 to 1995.

In 1997 I was promoted to my present position. I am an instructor for numerous training sessions designed to support corporate policy on pricing and costing theory, and to educate and support the use of various costing models. I am

responsible for the development and support of cost models concerning unbundled network elements and wholesale discounts. Since 1995, I have presented written and/or oral testimony before the Illinois Commerce Commission, the Pennsylvania Public Utility Commission, the New Jersey Board of Public Utilities, the Florida Public Service Commission, the North Carolina Utilities Commission, the Nevada Public Service Commission, the Public Utility Commission of Texas, the Georgia Public Service Commission, and the Federal Communications Commission on the avoided costs of resold services, the cost of unbundled network elements, access, reciprocal compensation, and universal service issues.

Q. What perspective does Sprint bring to this proceeding?

A. Sprint's interest in this proceeding is based on its plans to offer a portfolio of Sprint Integrated On-Demand Network ("Sprint ION $_{sm}$") products. This will include a choice of broadband offerings ranging from stand-alone high-speed data to integrated voice and high speed data offerings that are appropriate for a customer's specific needs.

Although Sprint's primary interest in this proceeding is in its capacity as a competitive local exchange carrier (CLEC), Sprint also operates and an ILEC in 18 states, serving more than 8 million access lines. As such, Sprint brings a unique perspective and business focus to this proceeding and has been required by the nature of its diverse business interests to analyze and arrive at balanced

positions that support the pro-competitive goals of the Telecommunications Act of 1996 ("the Act").

Q. What relevance does this proceeding have to the services Sprint plans to offer in Arizona?

A. Sprint, like any other business seeking to enter new markets with competitive services, must take into account multiple technical and economic factors as it deploys Sprint ION $_{sm}$ services. The prices established in this proceeding for the components Sprint requires to offer these services, including the loop, installation and conditioning, collocation, and line-sharing, are critically important to the pace and scope of Sprint's development of services in Arizona.

Q. How does Sprint's perspective as both a CLEC and an ILEC impact your review of Qwest's cost studies and prices in this proceeding?

A. In my capacity as Senior Manager - Network Costing, I routinely perform cost studies for unbundled network elements (UNEs) for Sprint's ILEC operations. As a result, I have direct experience with the underlying costing methodologies required to comply with the FCC's TELRIC guidelines. Furthermore, I have direct experience with the development of the myriad of inputs to a properly completed UNE cost study. This experience in preparing UNE cost studies on behalf of an ILEC provides an independent, fact-based standard for evaluating the reasonableness of Qwest's cost methodologies, inputs and resulting prices.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to identify and describe deficiencies in Qwest's cost studies, including issues associated with costing methodology and development of input values, which result in prices for UNEs which are too high and should be reduced. I will compare Qwest – Arizona's proposed rates with comparable rates filed by Sprint and later adopted by the Nevada Public Service Commission in Docket No. 96-9035. Where comparable Sprint rates are not available in Nevada, I will use Sprint's recently approved cost studies and rates in North Carolina (Carolina Telephone and Telegraph Company, Docket Number p-100, Sub 133d), as shown on Attachment RGF1.

To the extent that Sprint does not comment on other issues, does not imply that Sprint agrees with Qwest.

II. LOOP COST - RECURRING

Q. Please compare the unbundled loop recurring rates proposed by Qwest with those proposed by Sprint in other states.

A. Sprint's unbundled loop rates are generally much lower in comparable geographic (customer density) areas.

Q. Please compare the loop costs proposed by Qwest – Arizona with those of Sprint – Nevada.

A. Both Sprint and Qwest deaverage loop rates into multiple zones. Generally, those wire centers with the greatest customer density, and, therefore, the lowest loop costs, are grouped together into a single, low cost zone. Wire centers with the lowest customer density, and, therefore, the highest loop costs, are grouped together into a single, high cost zone. There are one or more zones between these two extremes.

Qwest's Zone 1, the most dense and urban zone, represents the area where competition is most likely to occur. As seen in Attachment RGF1, Qwest's proposed rate in Zone 1 is $23.07, which is more than double the $10.23 rate adopted by the Nevada Commission in Sprint's Zone 1. Qwest's proposed rate is also more than double the rate originally proposed by Sprint. Such a disparity raises serious concerns about Qwest's cost study methodology and input values.

Q. Since the model used to determine Sprint's loop costs in Nevada differs from Qwest's loop costing model, is there a way to objectively compare Sprint's loop costs with Qwest's?

A. Yes. For comparison purposes, I will use the FCC's Synthesis Model to compare Sprint's and Qwest's loop costs in similar urban areas. Note that I am not recommending the Commission use the Synthesis Model in this proceeding. Note also that the analysis includes total USF cost, not just loop costs. I am simply demonstrating that using a single model, with the same set of inputs and assumptions, will result in similar costs for Sprint and Qwest in similar geographic

areas. There is no reason that Qwest's loop costs in urban areas of Arizona should be more than double Sprint's loop costs in urban areas.

Q. What is the result of the analysis of the FCC Synthesis Model?

A. The results are shown on Attachment RGF2, which illustrates the cost per line and density by wire center for both Qwest – Arizona and Sprint – Nevada. The graph illustrates that the loop costs are inversely related to line density. It also illustrates that Qwest – Arizona and Sprint – Nevada have similar costs in similar density areas.

This analysis demonstrates that Qwest's unbundled loop recurring rates in Arizona should not be more than double those of Sprint – Nevada. Again, I am not suggesting that the FCC Synthesis model should be used by the Commission, or that the actual rate levels produced by the Synthesis model are reasonable. But Qwest's recurring loop rates in Arizona should be similar to those of Sprint – Nevada in similar geographic areas.

III. LINE SHARING

A. Loop Cost Allocation (Rate Element 9.4.1)

Q. Are there incremental costs associated with line sharing?

A. Yes. These incremental costs include,

- customer premises equipment (CPE) – splitter inside the customer premises
- splitter in the central office
- cross-connect cables in the central office
- Operational Support System (OSS) costs

In addition, loop conditioning may be an incremental cost, as discussed below. Qwest has developed rates for each of these services, which are discussed below.

Q. Are there any incremental loop costs associated with line sharing?

A. No. By definition, the loop already exists before line sharing is possible. Line sharing does not create any additional loop costs.

Q. Is the cost of the loop recovered by existing services?

A. This question is moot. Since there are no incremental loop costs created by line sharing, the question of loop cost recovery is irrelevant.

Regardless, the answer to the question for all loops is yes. While basic residential services are not priced at cost, loop costs are recovered directly and indirectly through a variety of services, including basic residential and business services, access, features, and both direct and indirect subsidies.

In urban areas, where competition is most likely to occur, it is even more likely that loop costs are fully recovered. This is because loops in dense, urban areas have a lower cost than loops in suburban and rural areas. Because pricing for loop-related services is generally averaged over geographic areas, customers in urban areas usually pay the same rate as customers in higher cost areas. Thus, urban rates for loop services are recovering a greater portion of their loop costs than other geographic areas.

Q. Qwest is proposing a monthly recurring charge of $5.00 per loop. If the Commission were to approve such a rate, would other rates need to be adjusted?

A. Yes. Because loop costs are currently being recovered through a variety of services, including basic residential and business services, access, features, and both direct and indirect direct subsidies, an additional $5.00 per line due to line sharing would imply an over-recovery of loop costs. Other rates would need to be adjusted to compensate for the over-recovery.

B. Engineering (Rate Element 9.4.8)

Q. Does Sprint agree with the way the engineering element is to be applied in billing?

A. No. The Qwest cost study indicates that the engineering charge will always be applied to line sharing arrangements. The charge is calculated at **[Begin Qwest**

Proprietary] hours **[End Qwest Proprietary]** engineering times the loaded labor rate to equal a total charge of $1,274.63. In some instances, Qwest may expend this much engineering effort on splitter arrangements. However, in instances where the splitter is placed by the CLEC in his own caged or cageless collocation area and collocation cross-connects are used to facilitate line sharing, there should be no engineering charges on Qwest's part. In this instance, no line sharing construction work is done by Qwest, and engineering records should be automated by the OSS processes. In this case, cross-connect cabling is ordered from the collocation portion of Qwest's rate list, so no engineering from the line sharing portion of Qwest's rate list should apply. Sprint believes that the Commission should recognize that in this instance, no engineering charge is proper.

IV. LOOP CONDITIONING (LOAD COIL / BRIDGE TAP REMOVAL)

A. Load Coil Removal

Q. Does Sprint believe that ILECs should be allowed to recover the cost of loop conditioning?

A. Sprint believes that it is inconsistent with TELRIC principles for the ILEC to recover the cost of loop conditioning directly from CLECs, because the TELRIC cost of the loop reflects the cost of providing a "clean" loop, free of load coils and bridge taps.

However, Sprint acknowledges the FCC's repeated position that ILECs may recover the cost of loop conditioning from the CLECs. Given this FCC position, it is imperative that the cost of loop conditioning reflect TELRIC principles.

Q. Please compare Qwest's loop conditioning NRCs with those of Sprint.

A. For this analysis, I will compare Qwest's cost studies with Sprint's recently approved cost studies and rates in North Carolina, as shown on Attachment RGF1. Qwest's cost studies are performed on a per loop basis, assuming three locations per loop. However, with one exception, Sprint's cost studies are performed on a per location basis. The one exception is the case of load coil removal for loops less than 18,000 feet from the central office.

Qwest's load coil / bridge tap removal (Rate element 9.2.3 on Exhibit MA-1A) NRC is $649.98 per loop. Sprint's rate varies depending on the type of work being done, the number of locations requiring conditioning, and the outside plant environment (aerial, buried, or underground). Qwest's rate can be more than 400 times greater than Sprint's rate in North Carolina for the identical work.

For load coil removal in loops greater than 18,000 feet, Sprint's rate is $64.28 ($26.51 Engineering + $16.21 Travel + $21.56) for the first removal in each aerial or buried location, and only $1.46 for additional load coil removals at the same location. In underground locations, Sprint's rate is $441.57 ($26.51 Engineering

+ $16.21 Travel + $398.85) for the first removal, and only $1.59 for additional load coil removals at the same location.

Q. Please describe the work involved in "removing" a load coil, or "unloading" a cable pair.

A. Generally, the load coil is not actually removed, it is simply disconnected from the cable pair. This involves snipping off the four wires that connect the coil to the cable pair, and then reconnecting the two ends of the cable pair. In larger cables, this generally requires removing a connector that splices twenty-five pairs at a time, pulling out the load coil wires, and replacing the connector. The actual work time involved in making the connections is no more than a minute or two, but set-up time can be significant, particularly when working in manholes. This is why an efficient ILEC will unload a minimum of 25 cable pairs at a time for loops shorter than 18,000 feet in length, instead of one at a time as assumed by Qwest.

Q. Why are Qwest's NRCs for load coil removal so much higher than Sprint's?

A. The difference is due to at least five main reasons. They are:

1. Qwest's cost studies contain excessive engineering time,
2. Qwest's cost studies contain much greater work times than comparable Sprint cost studies,
3. Qwest's cost studies do not offer different rates according to plant type,

4. Qwest does not recognize the lower incremental cost of performing additional unloadings at the same time and location, and
5. Qwest's cost studies include excessive allocations of shared and common costs.

Each reason will be discussed in detail below.

1. Engineering Time

Q. Please discuss Qwest's assumed work time for engineering associated with line conditioning.

A. Qwest relies on inflated time estimates to generate costs. Qwest assumes **[Begin Qwest Proprietary]** minutes **[End Qwest Proprietary]** engineering time, which is four times the amount in Sprint's cost study in North Carolina, which assumes only **[Begin Sprint Proprietary]** minutes **[End Sprint Proprietary]** for the same work.

2. Work Times

Q. Please discuss Qwest's assumed work times for load coil removal.

A. Qwest relies on inflated work time estimates to generate costs. In contrast, Sprint's North Carolina cost study is based on actual prices Sprint pays to

splicing contractors to perform the related work activities. Sprint is achieving these tasks at a much lower cost than Qwest claims.

Q. Can you provide a specific examples of inflated work times?

A. Yes. For example, load coil removal requires three main functions; 1) set-up, 2) open and close splice enclosure, and 3) unload cable pairs. While cost differences exist in all three functions, this example will focus on the first and third functions, the set-up and actual unloading of the cable pairs.

Q. Has Qwest inflated actual set-up times?

A. Yes. Qwest assumes an average of **[Begin Qwest Proprietary]** minutes **[End Qwest Proprietary]** set-up time. This is excessive in buried and aerial environments. The set-up time required for the technician to park the truck, set-up a cone in the street, gather the appropriate tools, and raise a bucket is closer to five to ten minutes. (This time does not include travel or engineering time, which are separate elements in the Qwest cost study.)

Q. Has Qwest inflated the actual unloading work times?

A. Yes. Sprint pays contractors in North Carolina an average of **[Begin Sprint Proprietary]** $ **[End Sprint Proprietary]** per cable pair for cable unloading in underground plant, and **[Begin Sprint Proprietary]** $ **[End Sprint Proprietary]** per cable pair in aerial or buried plant. Qwest assumes an average of **[Begin Qwest Proprietary]** minutes **[End Qwest Proprietary]** for

unloading. Assuming Qwest's labor rate of **[Begin Qwest Proprietary]** $ per hour **[End Qwest Proprietary]** results in a total cost of **[Begin Qwest Proprietary]** $ (hour * $) **[End Qwest Proprietary]** per cable pair. This is **[Begin Sprint Proprietary]** times Sprint's rate of $ **[End Sprint Proprietary]** per cable pair.

3. Plant Mix

Q. Please discuss the effect of plant mix on unloading costs.

A. Qwest makes no distinction between underground, buried, and aerial environments. Sprint's cost studies reflect the significant cost variances between these environments.

Q. How does plant mix affect NRC costs?

A. The costs associated with accessing cable pairs is significantly higher when technicians need to access underground facilities (manholes). This is because it is more labor intensive to enter a manhole to perform loop conditioning activities than it is to perform the same procedures within aerial or buried facilities. Underground facilities must be purged of potentially dangerous gases and often need to be pumped out for water. These activities are not required for aerial and buried facilities, and only one technician is usually required.

Q. How are these differences reflected in Sprint's rates?

A. Sprint varies its rates to reflect the vast differences in cost. For example, load coil removal in aerial and buried plant is only $21.56 per location for loops over 18,000 feet in length, versus $398.85 in underground locations, as shown in Attachment RGF1.

4. Incremental Cost of Additional Unloading at Same Time / Location

Q. Do economies exist when unloading multiple cable pairs at the same time and location?

A. Yes. Qwest's rate of $649.48 includes one engineering job, one travel charge, one site set-up charge, and one site tear down charge. However, if multiple cable pairs are unloaded at the same time and location, these charges do not repeat for each cable pair. Sprint's cost study in North Carolina recognizes this by charging a much lower rate for additional unloadings at the same time and location. For example, the initial load coil removal in aerial and buried plant is $21.56 per location for loops over 18,000 feet in length, versus $1.46 for additional load coil removals at the same time and location, as shown in Attachment RGF1.

5. Shared and Common Costs

Q. Please discuss Qwest's cost study adjustments for "Directly Assigned," "Directly Attributed," and "Common" costs.

A. Qwest's three cost factors for these expenses are greater than the analogous adjustments in Sprint's cost studies in North Carolina. Sprint's cost studies have two factors, an Other Direct Cost Factor and a Common Cost Factor, which are equivalent to Qwest's three cost factors.

Attachment RGF3 shows the Qwest cost factors restated to percentages comparable to Sprint's factors. As can be seen, Qwest's cost factors which are equivalent to what Sprint refers to as "Other Direct Costs" are Product Management, Sales, Other Operating Taxes, Network Operations, Network Support, and the Land & Buildings portion of General Support expenses. Qwest's factor is equivalent to **[Begin Qwest Proprietary]** % **[End Qwest Proprietary]** of Direct Costs, which is almost four times Sprint's factor of **[Begin Sprint Proprietary]** % **[End Sprint Proprietary]**. It appears that Qwest is allocating a significantly higher percentage of marketing-related expenses to its UNE prices than is Sprint.

Qwest's cost factors equivalent to what Sprint refers to as "Common Costs" is **[Begin Qwest Proprietary]** % **[End Qwest Proprietary]** of Direct Costs, which is greater than Sprint's factor of **[Begin Sprint Proprietary]** % **[End Sprint Proprietary]**. Given that Qwest is a significantly larger ILEC than Sprint, its should be able to attain a lower common cost factor than Sprint.

Note that Qwest uses these three cost factors throughout their cost studies. So while this discussion refers specifically to Qwest's cost study for Loop Conditioning, it is applicable to many other Qwest cost studies.

B. Load Coil Removal in Loops Less Than 18,000 Feet

Q. Please compare Qwest's cost study with Sprint's cost study for load coil removal in loops less than 18,000 feet from the central office.

A. Sprint's cost study in North Carolina produced a cost of only $38.51 per loop. Qwest's rate for the same service is $649.98, which is almost seventeen times that of Sprint.

Q. For loops less than 18,000 feet in length, why is Qwest's load coil removal NRC so large?

A. In addition to issues raised above, there are at least two additional reasons. First, Qwest's cost study assumes loops are unloaded one at a time, rather than for an entire binder group. This is unreasonable for loops less than 18,000 feet in length. Second, Qwest assumes the removal of three load coils for each loop, which is also unreasonable for loops less than 18,000 feet in length.

Q. Considering your first reason, why is it unreasonable for Qwest to assume loops are unloaded on at a time?

A. Generally, load coils are not required for loops shorter than 18,000 feet in length. However, they are required to provide standard voice-grade service to customer locations over 18,000 feet in length. Therefore, Sprint's position is that load coils should be removed in bulk from all loops that are shorter than 18,000 feet in length, at a minimum of 25 pairs at a time, and left in-place on loops longer than 18,000 feet in length. This enables Sprint to efficiently minimize costs associated with load coil removal.

Sprint performs this function on twenty-five cable pairs at a time, equal to one binder group. Performing this work on only one loop at a time is inconsistent with the fact that Qwest has greater customer densities, which results in larger cable sizes and the economical need to perform such activities on an even greater number of pairs at one time. One would expect Qwest to perform this function on a minimum of 50 or 100 pairs at a time on loops shorter than 18,000 feet. Sprint finds it reasonable for Qwest to assume an average of 25 pairs being conditioned at one time.

Q. Are there reasons why Qwest should, in reality, be removing load coils at every opportunity presented?

A. If for no other reason than to support the sizable roll-out of its own DSL offering. It is unlikely that Qwest's engineering and operations are implementing loop conditioning for only one cable pair at a time. It seems intuitive that in order to meet their own marketing initiatives that the telephone plant would be

conditioned in a more efficient manner, such as conditioning entire 50 or 100 groups at a time.

Q. What is a better methodology for Qwest to use in its loop conditioning cost study?

A. The proper methodology is to determine the loop conditioning costs on a unit, or per cable pair, basis. Since a least cost, most efficient methodology for conditioning loops less than 18,000 feet in length involves the removal of load coils in bulk, Sprint considers it reasonable and fair to spread the relatively fixed costs of accessing cable pairs across all cable pairs that will be unloaded in a twenty-five pair binder group. Sprint's methodology in North Carolina is to add the incremental labor costs associated with unloading twenty-four additional cable pairs to a single engineering and travel charge, and divide by twenty-five to determine the cost per pair for the entire binder group. (Sprint then spreads equally across all xDSL-capable loops that are ordered.)

Each carrier that uses the conditioned cable pair will then bear the cost of conditioning. This approach works properly across all market penetration rates.

Q. Considering for second reason, why is it unreasonable for Qwest to assume three load coils in loops less than 18,000 feet in length.

A. Loops less than 18,000 feet in length should never have more than two load coils. According to current engineering practices, load coils are placed 3,000

feet, 9,000 feet, and 15,000 feet from the central office, and every 6,000 feet thereafter. However, the "end section" must be at least 3,000 feet from the customer premises, and a customer cannot be placed between load coils. Therefore, loops less than 18,000 feet cannot have more than two load coils, one at 3,000 feet and a second at 9,000 feet from the central office. The third load coil at 15,000 feet cannot exist, because it would be less than 3,000 feet from the customer premises.

C. Bridge Tap Removal Work Time

Q. Please compare Qwest's bridge tap removal NRC in Arizona with Sprint's NRC in North Carolina.

A. Qwest's bridge tap removal (Rate element 9.2.3 on Exhibit MA-1A) NRC is $649.98 per loop. Sprint's rate varies depending on the type of work being done, the number of locations requiring conditioning, and the outside plant environment (aerial, buried, or underground). Sprint's rates for bridge tap removal are less than those for load coil removal; as low as $0.30 for additional removals in aerial or buried locations. Qwest's rate can be more than 2000 times greater than Sprint's rate in North Carolina for the identical work.

Q. Please describe the work involved in "removing" a bridge tap.

A. As with load coils, no plant is actually removed. The two wires of the cable pair are simply cut off and capped. In larger cables, this may require removing a

connector that splices twenty-five pairs at a time, pulling out the bridged pair, and replacing the connector.

Q. Please discuss Qwest's assumptions regarding the number of locations requiring bridge tap removal?

A. In addition to issues raised above, Qwest has assumed that three bridge taps will always need to be removed.

In reality, most bridge taps occur in distribution plant, which is primarily aerial and buried, with very little underground. Cable pairs are rarely bridged in the feeder plant where most underground cable occurs, precisely to avoid the high cost of re-entering these manhole splices. In fact, resistance design rules do not permit bridge tap to occur between a load point and the central office, hence feeder cable plant has almost no bridge tap (see Lucent Outside Plant Engineering Handbook, August 1994, Section 5-3).

Additionally, the vast majority of bridge tap removal can be done in aerial or buried cable, at far less cost. In the few instances when cable pairs are bridged in a manhole splice, it is very likely that the pair will be trimmed, or unbridged, at the point it leaves the conduit system and becomes aerial or buried for distribution. This is far less costly than opening a manhole splice.

Furthermore, cutting off the pair at the serving terminal at the same time that the xDSL service is installed will bring many loops into compliance at very little incremental cost. This is a common practice, eliminating a separate trip, set-up, and tear-down. The only additional time will be the few minutes it will take to cut the wires or remove them from the connector.

Q. To conclude, what are Sprint's recommendations concerning Qwest's cost studies for loop conditioning?

A. Sprint recommends that the Commission require that Qwest's cost studies should:

- develop loop conditioning costs for loops less than 18,000 feet in length based on deloading twenty-five cable pairs at a time, rather than one at a time,
- be modified to reflect costs more in line with those Sprint pays for efficient use of contract labor to condition loops,
- develop loop conditioning costs on a per location basis. For example, for loops over 18,000 feet in length, if a loop has one load coil, the CLEC should only pay for the removal of one load coil, and
- the cost for each location should be based on the actual mix of OSP environment (aerial, buried, or underground) where the loop work is performed.

VI. COLLOCATION

A. All Collocation

1. 48 Volt Power Usage, per Ampere, per Month (Rate Element 8.1.3)

Q. Do you have concerns regarding Qwest's monthly recurring rate of $11.36 power plant per amp charge for DC power consumption?

A. Yes, Sprint has three concerns about Qwest's power plant charge per DC amp. First, the power plant investment used to develop the rate is too high. Second, the rate appears to be developed for application on a per fused-amp basis as opposed to a load-amp basis. Third, it is unclear whether Qwest intends to bill for redundancy when backup power leads are ordered.

Q. What is the potential impact on rates of the investment issue discussed above?

A. Sprint's believes that Qwest's MRC rate of $11.36 per amp DC power consumption is overstated by approximately 40%. This is because the rate was developed based on an inflated investment per amp of **[Begin Qwest Proprietary]** $ **[End Qwest Proprietary]** in the Qwest cost study. The inflated investment results from the faulty assumption that collocation occurs only in central offices with 1,000 amp power plant capacity. In reality, collocation in the state of Arizona will occur in larger metropolitan central offices with greater

power plant capacity. Therefore, Qwest should modify its study to calculate DC power consumption based on a greater power plant capacity, for instance 4,000 amps.

To illustrate the magnitude of this issue, Sprint has recently filed costs in Nevada reflecting a **[Begin Sprint Proprietary]** $ **[End Sprint Proprietary]** per amp power plant cost. Sprint's Nevada territory is predominantly in Las Vegas. CLECs in Arizona will locate largely in urban areas with similar cost characteristics as Las Vegas. Reducing Qwest's power plant costs to Sprint's cost will reduce Qwest's DC power consumption rate by approximately 40%.

Q. What is the potential impact on rates of the fused-amp and redundancy concerns discussed above?

A. Qwest's total per amp rate for a single 100-amp cable would be $11.36 DC power per fused amp plus $7.37 AC power usage for a total of $18.73 per fused amp. As a worst case scenario, if Qwest was to bill for a redundant 100-amp power lead (redundant leads are standard in the industry), the total rate could double, soaring as high as $37.46 per fused amp.

Q. Are there valid reasons for billing on a fused-amp basis?

A. No, this practice results in over billing to CLECs. Often, CLECs order larger power cables and fuses that exceed their current power draw so that they can grow without having to sustain the augment fees and wait times associated with

adding power requirements. Obviously, if a CLEC orders a larger cable than they currently need, and that cable is also fused at a higher rate, the CLEC will pay for a lot of power that they are not actually consuming if they are billed on a fused amp basis.

Q. Will CLECs have to pay for ordering larger cables than they currently need?

A. Yes, in this situation, the CLEC would properly have to pay the nonrecurring charges for the installation of the larger power cables.

Q. If CLECs are billed on the basis of the load amps they order, and if CLECs order larger cables than they currently need, can Qwest protect itself from the possibility that CLECs may use more power than they ordered?

A. Yes. Qwest can protect itself from CLECs that draw power in excess of their declared loads by auditing and penalty provisions that may be included in the terms and conditions portion of the tariff or contract.

Q. Are there valid reasons for duplicate billing of DC power consumption for redundant power leads?

A. Such charges are completely unfounded. Monthly recurring DC power consumption charges are based on the investment required to produce DC power. Power cables, whether the main cables or redundant cables, are not a part of the DC power plant upon which the DC power consumption rates are based. Power cable costs are recovered in separate Qwest elements, primarily

through nonrecurring charges. The point is that the amount billed to a CLEC for DC power consumption should have nothing to do with whether the CLEC has only one power lead, or also a redundant lead. DC power consumption is dependent on the power load drawn by the CLEC's equipment in his collocation space. That does not change because a CLEC orders redundant cables.

Q. Please provide an example of how billing for fused amps and redundant power leads overstates billing.

A. CLECs normally order power on a load-amp basis. Load means the actual power drawn by the CLEC's telecommunications equipment. For safety and reliability purposes, power leads are engineered to withstand greater draws of power than are actually ordered. Also, the power leads are fused at higher levels than the expected draw. Fuses may be placed at 2.5 times the current expected draw in order to allow growth in the CLEC's power needs.

So, for example, if a CLEC ordered 80 amps of power (load basis), Qwest might fuse the lead at 200 amps (80 amps times 2.5). Typically, the CLEC would also order a redundant power lead, to provide backup power in case the main feed failed. Since the redundant feed is designed to carry the entire power load in case the main lead fails, it would also be fused at 200 amps.

Since the CLEC had ordered 80 amps on a load usage basis, one might expect his total power bill for the month to be $1,498.40 (80 amps times $18.73). But, if

Qwest is billing for fused amps, they would calculate the CLEC bill as $3,746.00 (200 amps times $18.73). This is a 150% over billing of $2,247.60 per month. In the extreme, if Qwest was also billing for redundant power leads as well as billing on a fused-amp basis, they would calculate the CLEC bill as $7,492.00 (200 amps * 2 leads * $18.73). In this case, the CLEC that should have been billed $1,498.40 would be billed $7,492.00, or a 400% over billing of $5,993.60 per month.

Q. Overall, how do Qwest's DC and AC consumption rates compare to Sprint's?

A. Sprint has recently settled DC and AC power rates in Nevada at a combined rate of $14.94 per load amp. Qwest's comparable rate, spoken of earlier in this discussion would be anywhere from $18.73 per fused amp to $37.46 per fused amp, depending on how Qwest applies billing. As pointed out in the previous example, not only are Qwest's rates much higher than Sprint's, but Qwest would also bill on a much higher quantity of fused amps instead of the proper level of load amps. Sprint believes that Qwest should enjoy similar economies of scale in Arizona operations, and therefore that Qwest's rates are excessive.

2. Security (Rate Element 8.1.9)

Q. Please compare Qwest's rates for Security to Sprint's rate in Nevada.

A. Rate element 8.1.9 of Qwest's proposed rate schedule (Exhibit MA-1A) has a monthly recurring rate of $0.87 for an "Access Card per Employee", plus another

monthly recurring charge of $8.07 for an "Access Card per Employee, per Office." This is well in excess of Sprint's security access card in Nevada, which is an NRC of $15 per employee, per office.

There is no reason that the issuance of a security card should require an ongoing monthly recurring charge of $0.87. Qwest's cost study attempts to recover the security system investment over the number of existing employees. By making this element a monthly recurring charge, directly attributable and common loadings have also been included which further inflates costs. Qwest should recover this charge as a one time NRC, not a monthly recurring charge.

B. Virtual Collocation

1. 48 Volt DC Power Cables (Rate Element 8.2.8)

Q. Rate element 8.2.8 in of Qwest's proposed rate schedule (Exhibit MA-1A) contains monthly recurring rates and NRCs for 48 Volt DC Power Cables. What concerns do you have with these rate elements?

A. Qwest power cable rates are greatly overstated as compared to those of Sprint.

Q. Can you give an example of such an overstatement?

A. Yes. In Nevada, Sprint's NRC for 50 amp connection for 100 feet in distance is approximately **[Begin Sprint Proprietary]** $, or $ **[End Sprint**

Proprietary] per foot for one feed. Qwest's cost study results in a cost of **[Begin Qwest Proprietary]** $ or about $ per foot (foot run, amp feed) **[End Qwest Proprietary]**, which is almost 11 times Sprint's rate per foot.

Q. What is Sprint's recommendation for power cable rates in this case?

A. Qwest power cable rate calculations seem to contain large errors, and the Commission should scrutinize Qwest's power cable rates closely in this case.

C. Cageless Collocation

1. Space Construction - Standard 40 Amp Power Feed (Rate Element 8.3.2)

Q. Rate element 8.3.2 of Qwest's proposed rate schedule (Exhibit MA-1A) contains monthly recurring rates and NRCs for a Standard 40 Amp Power Feed. What concerns do you have with this rate element?

A. There are at least three flaws in Qwest's Space Construction cost study. First, the rate is for two bays, which is contrary to FCC guidelines. The FCC states, "We require incumbent LECs to make collocation space available in single-bay increments, meaning that a competing carrier can purchase space in small enough to collocate a single rack, or bay, of equipment." (FCC 99-48, paragraph 43).

Second, Qwest's costs are clearly excessive for two bays and an associated power feed. As compared to Sprint-NV's rates of 2-bays and 1-50 Amp power feed ($213.67 MRC & $2,076.09 NRC), Qwest's cost study proposes $54.42 MRC and $29,823.10 for 2-bays and 1-40 Amp power feed which is considerably higher than Sprint-NV rates. Sprint cannot reconcile why Qwest's nonrecurring charge would need to be nearly ten times that of Sprint.

Third, cable racking and overhead support charges assume only three collocation bays in each office. This appears low considering the majority of the current collocation in Qwest - Arizona territory is in Phoenix. In Las Vegas, NV Sprint-LTD leases an average of **[Begin Sprint Proprietary] [End Sprint Proprietary]** collocation bays per office. In addition, the study assumes all cable racking is used by only by CLECs. When, in reality, the cable racking will be shared by Qwest and CLECs. Most ILECs recognize this and calculate cable racking on a per cable basis, and assign cable racking and overhead support to each cable used.

D. Caged Collocation

1. Space Construction - Standard 60 Amp Power Feed (Rate Element 8.4.2)

Q. Rate element 8.4.2 in of Qwest's proposed rate schedule (Exhibit MA-1A) contains monthly recurring rates and NRCs for a Standard 60 Amp Power Feed. What concerns do you have with this rate element?

A. There are at least two flaws in Qwest's Space Construction cost study. First, Qwest's costs are clearly excessive for a cage and an associated power feed. As compared to Sprint-NV's rates of a bay and 1-50 Amp power feed ($917.17 MRC & $3,504.19 NRC), Qwest's cost study proposes $94.30 MRC and $51,675.14 for one bay and 1-60 Amp power feed which is considerably higher than Sprint-NV rates. Again, Sprint cannot reconcile the huge difference in nonrecurring charges.

Second, cable racking and overhead support charges assume only three collocation bays in each office. This appears low considering the majority of the current collocation in Qwest - Arizona territory is in Phoenix. In Las Vegas, NV Sprint-LTD leases an average of **[Begin Sprint Proprietary]** **[End Sprint Proprietary]** collocation bays per office. In addition, the study assumes all cable racking is used by only by CLECs. When, in reality, the cable racking will be shared by Qwest and CLECs. Most ILECs recognize this and calculate cable racking on a per cable basis, and assign cable racking and overhead support to each cable used.

2. Grounding (Rate Element 8.4.4)

Q. Rate element 8.4.4 in of Qwest's proposed rate schedule (Exhibit MA-1A) contains monthly recurring rates and NRCs for a Grounding. What concerns do you have with this rate element?

A. The Qwest study assumes that each caged CLEC has to have a dedicated ground wire. Qwest witness Kennedy's testimony states that, "the grounding rate element recovers the cost of extending the building DC ground plane of the wire center to the CLEC's caged collocation space." (Page 21, line 11 – 13). Witness Kennedy's testimony, as well as the large and expensive varieties of wire used in the cost study, suggest an assumption that in all cases, a ground wire will have to be run from each collocation cage direct to the wire center ground plane at the base of the building. Such a cable run could be hundreds of feet from the collocation cage, and thus, very costly.

In reality, a grounding wire can be shared by several CLECs. In such an arrangement, a ground bar is run overhead of the collocation area, and multiple CLECs connect to the shared ground bar. Sprint commonly deploys a ground wire such that it is shared by four caged collocation arrangements. Qwest's grounding elements for all wire sizes should be divided by four to reflect the existence of such sharing arrangements. This should be done for both nonrecurring charges and associated monthly recurring maintenance charges.

VI. SUMMARY AND CONCLUSION

Q. Please summarize the differences between Qwest's proposed recurring and non-recurring rates those offered by Sprint's ILEC in Nevada and North Carolina.

A. Qwest's proposed rates are significantly higher than those offered by Sprint. Attachment RGF1 summarizes the two company's rates.

Q. Why are Qwest's proposed NRCs so high?

A. Sprint has identified at least seven areas where Qwest's cost studies inflate NRCs. They are:

1. Qwest's cost studies contain excessive engineering time,
2. Qwest's cost studies contain much greater work times than comparable Sprint cost studies,
3. Qwest's cost studies do not offer different rates according to plant type,
4. Qwest does not recognize the lower incremental cost of performing additional unloadings at the same time and location,
5. Qwest's cost studies include excessive allocations of shared and common costs,
6. Qwest assumes three load coil / bridge tap removals in each loop, which is excessive in most instances, and
7. Qwest performs load coil removal one loop at a time, which is not reasonable for loops less than 18,000 feet in length.

Q. Does this conclude your testimony?

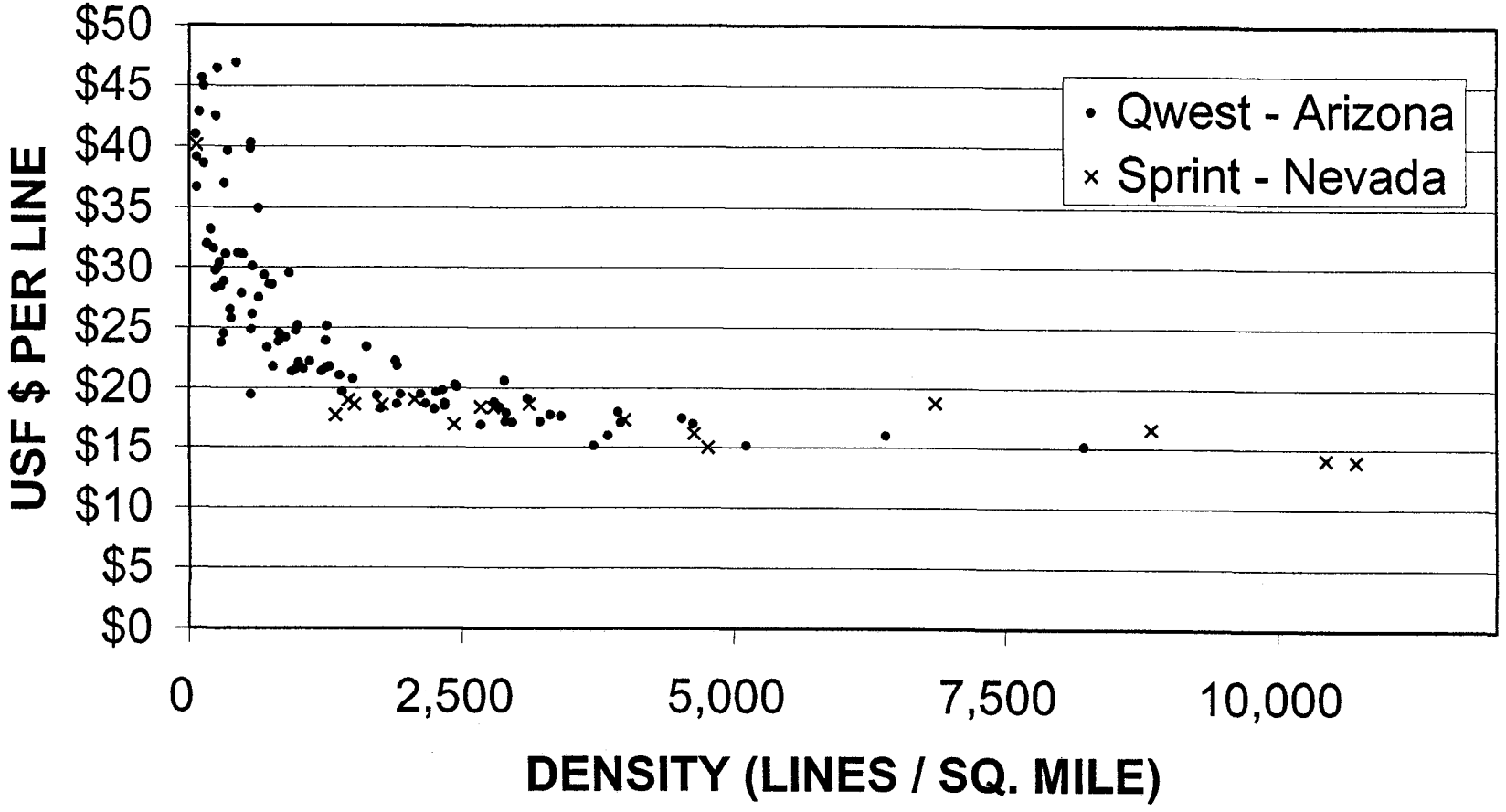
A. Yes, it does.

COMPARISON OF MRCs / NRCs

DESCRIPTION	Sprint - NC MRC	Sprint - NC NRC	Sprint - NV MRC	Sprint - NV NRC	Qwest - AZ MRC	Qwest - AZ NRC	Rate Element
Line Sharing							
Loop Allocation				$ 24.38	$ 5.00	$ 37.54	9.4.1
Engineering			(c)	(c)		$ 1,274.63	9.4.8
Local Loop - Analog 2-Wire							
Zone 1			$ 10.23		$ 23.07		9.2.1
Zone 2			$ 11.84		$ 28.64		9.2.1
Zone 3			$ 13.17		$ 42.14		9.2.1
Zone 4			$ 16.82				
Zone 5			$ 268.82				
First				$ 67.83		$ 87.91	9.2.6
Additional				$ 32.30		$ 75.74	9.2.6
Loop Conditioning - Per Line							
Loops Less Than 18,000 Feet in Length Only							
Load Coil Removal							
Cost Per Loop		$ 38.51				$ 649.98	9.2.3
Rate Per xDSL Capable Loop		$ 1.05					
Loop Conditioning - Per Location							
For the following per location charges, only one Engineering an							
Travel Charge is applied for each loop that requires any individua							
or combination of conditioning activities							
Engineering Charge		$ 26.51					9.2.3
Travel Charge		$ 16.21					9.2.3
Load Coil Removal							
Loops Over 18,000 Feet in Length Only							
Each Underground location		$ 398.85				$ 649.98	9.2.3
Each additional Ug load coil, same time, location & cable		$ 1.59				$ 650.98	9.2.3
Each Aerial location		$ 21.56				$ 651.98	9.2.3
Each additional Ae load coil, same time, location & cable		$ 1.46				$ 652.98	9.2.3
Each Buried location		$ 21.56				$ 653.98	9.2.3
Each additional Bu load coil, same time, location & cable		$ 1.46				$ 654.98	9.2.3
Bridged Tap Removal							
Each Underground location		$ 397.60				$ 649.98	9.2.3
Each additional Ug Bridged Tap, same time, location & cable		$ 0.34				$ 650.98	9.2.3
Each Aerial location		$ 20.40				$ 651.98	9.2.3
Each additional Ae Bridged Tap, same time, location & cable		$ 0.30				$ 652.98	9.2.3
Each Buried location		$ 20.40				$ 653.98	9.2.3
Each additional Bu Bridged Tap, same time, location & cable		$ 0.30				$ 654.98	9.2.3
Collocation							
All Collocation							
Power Plant, Per Amp			$ 14.94		$ 11.36		8.1.3
Power Usage, > 60 Amps			(a)		$ 7.37		8.1.3
Power Usage, < 60 Amps			(a)		$ 3.69		8.1.3
Security - Access Card per Employee			n/a	$ 15.00	$ 0.87		8.1.9
Security - Access Card per Employee, per Office			n/a		$ 8.07		8.1.9
Virtual Collocation							
48 Volt DC Power Cables							8.2.8
20 Amp Power Feed, per feed					$ 10.09	$ 5,528.47	
30 Amp Power Feed, per feed					$ 11.53	$ 6,316.35	
40 Amp Power Feed, per feed					$ 14.06	$ 7,706.09	
60 Amp Power Feed, per feed					$ 17.54	$ 9,613.92	
50 Amp Power Feed, per feed			$ 42.17	$ 2,076.09			
100 Amp Power Feed, per feed			$ 65.85	$ 3,631.32			
200 Amp Power Feed, per feed			$ 120.28	$ 6,511.88			
Cageless Collocation							
Space Construction - 40 Amp Power Feed							
2 Bays and 1 - 40 Amp Power Feed (b)			$ 213.67	$ 2,076.09	$ 54.42	$ 29,823.10	8.3.2
Caged Collocation							
Space Construction - 60 Amp Power Feed							
Cage - Up to 100 Sq. Ft. & 1 - 60 Amp Power Feed (b)			$ 917.17	$ 3,504.19	$ 94.30	$ 51,675.14	8.4.2
Grounding, per foot							8.4.4
2/0 AWG - per Foot					$ 0.0230	$ 12.59	
1/0 AWG - per Foot					$ 0.0382	$ 20.96	
4/0 AWG - per Foot					$ 0.0435	$ 23.81	
350 kcmil - per Foot					$ 0.0603	$ 33.04	
500 kcmil - per Foot					$ 0.0672	$ 36.81	
750 kcmil - per Foot					$ 0.1029	$ 56.40	
Per 100 Sq Ft Cage			$ 23.34				
Per Cageless or Virtual Bay			$ 2.92				

Notes:
(a) Sprint's $14.94 Power Plant rate includes AC usage for DC power plant. Sprint's power charge for HVAC is included in our floor space charges.
(b) Sprint's comparable charges include a 50 amp power feed.
(c) Sprint's engineering charges are included with specific line sharing elements.

FCC SYNTHESIS MODEL RESULTS BY WIRECENTER - DENSITY / USF COST PER LINE (Includes Switching)



THIS ATTACHMENT CONTAINS QWEST PROPRIETARY INFORMATION

COMPARISON OF OTHER DIRECT & COMMON EXPENSE LOADINGS
CABLE UNLOADING/BRIDGE TAP REMOVAL

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORTAION'S COMPLIANCE WITH CERTAIN WHOLESALE PRICING REQUIREMENTS FOR UNBUNDLED NETWORK ELEMENTS AND RESALE DISCOUNTS	)	**DOCKET NO. T-00000A-00-0194**
STATE OF KANSAS	)	**AFFIDAVIT OF RANDY FARRAR**
COUNTY OF JOHNSON	)	

Randy Farrar, of lawful age being first duly sworn, deposes and states:

1. My name is Randy Farrar. I am employed as Senior Manager – Network Costs for Sprint/United Management Company. I have caused to be filed written testimony and exhibits in support of Sprint Communications Company, L.P. in Docket No. T-00000A-00-0194.

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Randy G. Farrar
Randy Farrar

Subscribed and sworn to before me this 14th day of May 2001.

NOTARY PUBLIC - State of Kansas
SUSAN SKAHAN
My Appt. Exp. 2/18/05

Susan Skahan
Name: SUSAN SKAHAN
Notary Public in and for the
State of Kansas;
residing at Sprint Corporation

My Commission expires: 2/18/05.

CERTIFICATE OF SERVICE

I, KATHERINE M. McMAHON, hereby certify that I have this day served a true and correct copy of the "Direct Testimony of Randy G. Farrar on Behalf of Sprint Communications Company L.P." in Docket No. T-00000A-00-0194 upon all parties of record in Docket No. T-00000A-00-0194 (see the attached list) by placing a copy thereof into the U.S. Mail, postage prepaid.

Dated this 15th day of May 2001 at San Francisco, California.

Katherine M. McMahon

Katherine M. McMahon
Legal Analyst II

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Docket T-00000A-00-0194
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