Exhibit No. ___ (RMW-1T)
Docket No. UT-023003

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Review of Unbundled Loop and Switching Rates; the Deaveraged Zone Rate Structure; and Unbundled Network Elements, Transport, and Termination	))))))	DOCKET NO. UT-023003

REPLY TESTIMONY OF WILLETT RICHTER, THOMAS MAZZIOTTI AND HAROLD WEST, III ON BEHALF OF VERIZON NORTHWEST INC.

SWITCHING RATE STRUCTURE

PUBLIC VERSION

April 20, 2004

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I. INTRODUCTION

Q. MR. RICHTER, PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Willett Richter. I am employed by Verizon Communications as a Senior Specialist - Engineering Regulatory Support. I filed direct testimony in this proceeding on June 26, 2003 as part of the Recurring Cost Panel, supporting, among other things, the switching cost studies filed by Verizon Northwest Inc. ("Verizon NW").

Q. MR. MAZZIOTTI, PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Thomas Mazziotti. I am employed by Verizon Communications as Senior Staff Consultant. I filed direct testimony in this proceeding on June 26, 2003 as part of the Recurring Cost Panel, supporting, among other things, the switching cost studies filed by Verizon NW.

Q. MR. WEST, PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Harold West, III. I am Director – Regulatory Support for Verizon Communications, Inc. I filed direct testimony in this proceeding on June 26, 2003 regarding the state of competition in Washington.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of this testimony is to respond to the testimony of AT&T and MCI witnesses Joseph Gillan and Richard Chandler regarding the appropriate rate structure to apply to switching costs, and Staff's proposal to deaverage switching rates. Mr. Richter responds to AT&T/MCI's discussion of modern circuit switches from an engineering perspective, Mr. West addresses the issue of flat switching

rate structure, and Mr. Mazziotti responds to the WUTC Staff's proposal to deaverage switching rates.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Commission should adopt a switching rate structure that is consistent with cost causation principles. Contrary to the claims of AT&T/MCI witnesses Gillan and Chandler, substantial portions of the switch are traffic sensitive, meaning that they cause Verizon NW to incur costs based on usage and have usage capacity limits. Verizon NW's switching cost studies accurately identify the traffic sensitive portion of switching resources in Verizon NW's network. UNE costs that are usage sensitive should be recovered from CLECs based on each CLEC's proportionate amount of usage. AT&T/MCI's proposal to include all usage sensitive costs in the flat-rated port charge is plainly inappropriate and would allow carriers such as AT&T/MCI, which target high volume customers, to be subsidized by carriers with low volume customers. In addition, switching rates should not be deaveraged, since the traditional port/MOU rate structure accounts for all relevant switching cost differences among users.

II. MODERN SWITCHES HAVE SIGNIFICANT TRAFFIC SENSITIVE RESOURCES

Q. DO YOU AGREE WITH MR. GILLAN AND MR. CHANDLER'S CHARACTERIZATION OF THE LIMITATIONS OF MODERN CIRCUIT SWITCHES?

A. No. Mr. Gillan and Mr. Chandler argue that modern digital switches are not limited by processor or switch fabric capacity, and only limited by the number of lines a switch can serve. (Gillan-Chandler Dir. at 16.) Therefore, they conclude that the amount of traffic that travels over a switch is immaterial to the costs incurred by the incumbent, and that switching UNE rates should not be based on usage.

Their approach is incorrect in a number of ways, as we explain below. Most important, Mr. Gillan and Mr. Chandler do not account for the fact that modern digital switches are traffic limited but are designed *in advance* to avoid exhaust situations. Network engineers and switch vendors constantly monitor network usage to ensure that existing switches have adequate capacity to handle their expected traffic loads. Simply because their efforts are largely successful, and switches do not typically exhaust or approach exhaust, does not mean that switches are not ultimately traffic limited and that Verizon NW does not incur switching costs based on usage.

Q. HAVE AT&T AND MCI TRADITIONALLY ADVOCATED A FLAT RATE FOR SWITCHING?

A. No. At the outset, the Commission should recognize that AT&T and MCI's advocacy of a flat rate for switching contradicts years of testimony submitted by their various experts. After years of proposing traffic sensitive, minute-of-use ("MOU") switching rates and acknowledging that a substantial portion of switching resources are traffic sensitive, AT&T and MCI have reversed course. Although Mr. Gillan and Mr. Chandler attempt to camouflage this reversal of

position as a new idea that has simply taken time for them to develop (Gillan-Chandler at 25-26), they fail to demonstrate the error of the long held, industry-wide conclusion that some switching costs are traffic sensitive.

AT&T and MCI's flat rate proposal appears designed to implement a rate structure that subsidizes them, rather than to properly align costs and rates. As we explain in more detail below, because CLECs typically target high-usage business customers, a flat switching rate is generally much more desirable to those CLECs than a combined MOU and flat rate structure. Under a combined MOU and flat rate structure, all carriers must pay based on their customers' usage. A flat rate structure, however, averages out usage costs among all customers. Therefore, because many switching resources are traffic sensitive, a flat rate structure for switching would create artificial subsidies in which low-usage customers would pay more than they should, and high-usage customers would pay less. Those subsidies would advantage AT&T and MCI because they would pay Verizon NW less than the costs incurred by their primarily high-usage customers.

Q. WHAT HAVE AT&T AND MCI PREVIOUSLY ADVOCATED FOR SWITCHING RATE STRUCTURE?

A. In many recent proceedings, AT&T and MCI have admitted that some switching resources are traffic sensitive and that a flat switching rate would not comport with the principle of cost causation. For example, in the Verizon Virginia UNE proceeding, AT&T witness Mr. Kirchberger opposed WorldCom's flat rate

proposal because, in his opinion, it "d[id] not properly align rates and costs."[1] Mr. Kirchberger further admitted that the combined rate structure that Verizon NW proposes in this proceeding "is the same rate design the Commission first established in its 1996 Local Competition Order and adopted by nearly every state in the country."[2/] Both AT&T and WorldCom admitted in that proceeding that certain switching resources are limited by usage.[3/] In fact, the HAI Model Release 5.3 Inputs Portfolio filed by AT&T in this proceeding has an input for "Switch Traffic Limit, BHCCS" that is defined as "maximum amount of traffic, measured in hundred call seconds (CCS), the switch can carry in the busy hour (BH)."[4]

Q. HOW DO VERIZON NW'S COST STUDIES IDENTIFY TRAFFIC SENSITIVE SWITCHING RESOURCES?

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1 Direct Testimony of Robert J. Kirchberger on Behalf of AT&T in *I/M/O Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc. and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-251, at 15 (filed July 31, 2001).

2 Direct Testimony of Mr. Kirchberger at 14.

3 *See* Joint Initial Post-Hearing Brief of WorldCom, Inc. and AT&T on Switch Cost Issues in *I/M/O Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc. and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-251, at 26 (filed Jan. 17, 2002); *see also* Direct Testimony of Chuck Goldfarb on Behalf of WorldCom, Inc. in *I/M/O Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc. and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-251, at 4 (filed July 31, 2001) (admitting that certain switching resources are designed in anticipation of peak period usage but proposing that they be recovered through a flat rate for administrative reasons).

4 *See* HAI Model Release 5.3 Inputs Portfolio at page 98, 5.2.2 (filed Jan. 23, 2004).

A. Verizon NW's switching cost study allocated switching costs to the MOU rate for those parts of the switch that are traffic sensitive. Specifically, 35.83% of Verizon NW's switching costs are non-traffic sensitive and are included in Verizon NW's port charge; the other 64.17% of the switching costs are usage sensitive and are recovered through Verizon NW's switching minutes-of-use charges.[5] The traffic sensitive costs are mainly associated with the switch processor, line centi-calling seconds ("CCS"), and trunk CCS.

Q. IS USAGE IRRELEVANT AS A SWITCH DESIGN CRITERION, AS MR. GILLAN AND MR. CHANDLER CLAIM? (GILLAN-CHANDLER AT 4).

A. No, Mr. Gillan and Mr. Chandler's claim that usage is irrelevant to switch design and engineering is simply wrong. All of the types of switches modeled in Verizon NW's switching cost studies, the Lucent 5ESS, the Nortel DMS-100, and the AGCS GTD-5, have definite usage limitations. As a result, when a new switch is planned, Verizon NW engineers must carefully account for the estimated usage that the switch will experience. Indeed, Messrs. Gillan and Chandler admit as much when they note that ILECs purchase different sized switches in order to meet specific local demand. (Gillan-Chandler at 17.) For each such purchase, Verizon NW incurs more costs when it designs a switch to handle more usage.

Specifically, additional peripherals and controllers are required to accommodate higher usage. In the DMS-100, additional DS-30 links are

[5] This calculation is shown in the Local Switching cost study at WA CD #2, 5. Cost Study Support Files, Switching and Common Transport, Switch Cost Study Support Files, WA UNE Weighting Model.xls, Tab "Wholesale IE Table", (Cell C943 + Cell C955) divided by Cell C3.

required. This in turn requires additional Line Group Controllers (part of the switch processor that is the interface between the Line Concentrating Module and the switching network) and additional network ports. Likewise, in the 5ESS, additional usage can require additional time slot sets or peripherals, both of which require additional switch modules and CM ports. Therefore, the amount of equipment Verizon orders, and the cost of the component, are directly linked to the usage Verizon expects a particular switch to experience.

Ultimately, traffic sensitive switching resources are common resources that are shared between the users of a switch. Simply because estimates of usage are made before deployment, however, does not demonstrate that Verizon NW does not incur additional costs based on increased usage. Rather, the costs are incurred based on the anticipated need for traffic sensitive switch resources prior to deployment, and, sometimes, periodically during the life of the switch when upgrades and additional capacity are needed. The goal of Verizon's engineers is to properly design switches prior to deployment, so that exhaust situations do not occur, and to monitor the switches during their use to avoid exhaust.

Q. DO THE SWITCH VENDORS ACKNOWLEDGE THAT THEIR SWITCHES ARE TRAFFIC SENSITIVE?

A. Yes, the switch vendors acknowledge in the documentation of their switches that they are inherently limited by usage. As this documentation shows, switch vendors have implemented tools in their switches to monitor capacity and prevent potential exhaust situations. If switches were capable of handling infinite

amounts of usage, as Mr. Gillan and Mr. Chandler imply, such tools would not be necessary.

For example, in the engineering documentation accompanying the 5ESS switch, Lucent provides carriers with worksheets that allow them to perform detailed analysis of processor usage capacity so that exhaust or near-exhaust situations can be identified. If usage were not a limiting factor, as Mr. Gillan and Mr. Chandler claim, such analysis would be unnecessary and not included in the switch engineering guidelines.

Q. WHAT FURTHER EVIDENCE IS THERE FROM SWITCH VENDORS THAT SWITCHES ARE TRAFFIC SENSITIVE?

A. Both Nortel and Lucent have developed management tools for their switches that monitor switch usage and identify possible processor exhaust situations. Nortel has developed the **[BEGIN NORTEL PROPRIETARY] [END NORTEL PROPRIETARY]** tool for the DMS-100 switch. The **[BEGIN NORTEL PROPRIETARY] [END NORTEL PROPRIETARY]** system identifies possible processor exhaust based on a series of demand inputs such as lines, trunks, calls and feature activations at both present and future timeframes. Similarly, Lucent's pricing and engineering tool, **[BEGIN LUCENT PROPRIETARY] [END LUCENT PROPRIETARY]**, estimates the usage load on individual SM2000 switching modules and prevents its users from adding additional network units once the usage capacity is reached. For the GTD-5 switch, Lucent (formerly AGCS) employs the **[BEGIN LUCENT PROPRIETARY] [END LUCENT PROPRIETARY]** tool, which sizes the switch and

associated peripheral and traffic sensitive hardware based on criteria provided by Verizon engineers.

In addition, Verizon CA uses an in-house tool called the Traffic Sensitive Forecast ("TSF"), which, based on usage-related criteria entered by Verizon engineers, monitors the amount of traffic sensitive resources on particular switch and determines when additional equipment is needed. The TSF tool operates in realtime with switches to determine what switch resources are assigned and what grade of service can be provided, among other things.

Again, if usage were not a significant limitation on switch capacity, the usage limitations in these tools would be unnecessary.

Q. MR. GILLAN AND MR. CHANDLER CLAIM THAT THE NOTION OF TRAFFIC SENSITIVE SWITCHING COSTS IS NO LONGER ACCURATE IN THE CONTEXT OF UNBUNDLED SWITCHING. IS THIS CORRECT? (GILLAN-CHANDLER DIR. AT 5-8.)

A. No, Mr. Gillan and Mr. Chandler's explanation of the evolution of switching cost modeling does not prove that switching costs are not traffic sensitive. First, Mr. Gillan and Mr. Chandler claim that the unbundled switching element allows the purchaser to use all of the switch's services. (Gillan-Chandler Dir. at 5.) While this is true, it does not negate the fact that the traffic sensitive switch resources are sized before deployment, based on expected traffic loads. For example, the initial switch is engineered for a given line concentration ratio (LCR) based on the expected average busy hour usage per end user line. Because the cost of these resources varies based on expected usage, users incur different costs based on

their actual usage. This fundamental concept does not change simply because the switch is treated as a common resource.

Q. IS THE SCIS MODEL BIASED TOWARD ASSUMING THAT SWITCH RESOURCES ARE TRAFFIC SENSITIVE, AS MR. GILLAN AND CHANDLER CLAIM?

A. No, it is not. The SCIS model has been widely recognized as a highly accurate tool for modeling switching costs. It is not biased toward (or against) assuming that particular switching costs are traffic sensitive; rather, it follows the engineering rules supplied by the switch vendors. If a party disagrees with the assignment of resources to the traffic sensitive and non-traffic sensitive categories, it can modify SCIS outputs so that certain investments are recovered through either the port or MOU rate. Indeed, AT&T has attempted to do so in numerous UNE cost proceedings.

Q. IS THE SWITCH FABRIC LIMITED BY USAGE CAPACITY?

A. Yes. Mr. Gillan and Mr. Chandler admit that the switch fabric is limited by the usage measurement centi-calling seconds, or CCS. (Gillan-Chandler at 12.) Because the switch fabric is usage-limited, Verizon has at times undertaken extensive and expensive upgrades due to this limitation of the switch fabric.

Q. DO YOU AGREE WITH MR. GILLAN AND MR. CHANDLER THAT THE SWITCH PERIPHERY IS ONLY LIMITED BY THE NUMBER OF PORTS?

A. No. The switch periphery is limited by ports and usage. The central office line peripherals have two limiting capacities, (1) line ports and (2) line CCS. For example, assume a line peripheral with a 500 line capacity has a total line CCS

capacity of 2000 CCS. If the average end user has a busy hour CCS of 4 or less, the line peripheral will exhaust its line ports before its line CCS capacity. On the other hand, if the average busy hour CCS per line is 5 CCS, the line peripheral will be "load" limited and only 400 lines (out of the 500 total line capacity) can be served in that peripheral. This is also known as "deloading" a line unit. This dual capacity (both line ports and line CCS) demonstrates how the line peripherals are traffic sensitive. The cost implications of higher than anticipated usage would be lower line port utilization and higher unit costs.

As a second example, consider the basic analog line unit in the 5ESS switch. At an 8:1 line concentration, it can hold 512 lines, but as this ratio decreases based on the CCS, the line unit can handle fewer lines. A 6:1 line concentration can support 384 lines, and a 4:1 line concentration can support 256 lines. As the usage increases, the number of lines that can be assigned to a line unit decreases.

Q. DO YOU AGREE WITH MR. GILLAN AND MR. CHANDLER THAT SWITCH PROCESSORS ARE NO LONGER USAGE-LIMITED? (GILLAN-CHANDLER DIR. AT 12-14.)

A. No, this is incorrect. While Mr. Gillan and Mr. Chandler are correct that switch processors have evolved over time and are able to handle far more traffic today than they were forty years ago, they are wrong to infer that there is no practical limitation on the amount of traffic that a switch processor can handle. Switch vendors have improved their switch processors in order to accommodate the explosion in telecommunications demand over the past forty years. Decades

ago, consumers used their telephones much less and were accustomed to more service interruptions than they are today. The goal of switch vendors since that time has been to meet the increased demand and usage, and to provide optimal service quality. While they have accomplished that goal in many respects, the fact remains that switch processors are ultimately usage-limited. Just as a computer processor has a limit that can be exceeded if there is not enough available memory, switch processors are limited despite the efforts of switch vendors and carrier engineers to avoid actual exhaust situations.

Q. HAS VERIZON EVER EXPERIENCED SWITCH EXHAUST DUE TO INCREASED USAGE?

A. Yes. In one Northern Virginia situation, the communications module ("CM"), which is an essential component of the switch processor, is operating at capacity and no additional switch modules can be added. This switch is currently in a near-exhaust situation. Similarly, Verizon recently replaced the processor complex in a Northern Virginia 5ESS switch due to a near-exhaust situation caused by usage. As in the first example, the traffic in this office approached the capacity limit of the CM. Another similar situation has occurred in New Jersey, where a switch is near exhaust due to limited umbilical capacity.

This type of exhaust is one of the most critical capacity limitations in a modern digital switch. Whereas a capacity exhaust in a line port peripheral would affect a few hundred customers, a processor exhaust can affect every line and service served by that switch, leaving tens of thousands of customers without telephone service.

Q. ARE MR. GILLAN AND MR. CHANDLER CORRECT THAT REALISTIC SUBSCRIBER USAGE DOES NOT AFFECT THE CAPACITY OF THE SWITCH? (GILLAN-CHANDLER DIR. AT 16-17.)

A. No, this is incorrect and overly simplistic. Realistic subscriber usage characteristics do affect switch capacity. As explained above, expected usage is a primary consideration involved in the design of a switch before its deployment, and switches are continuously monitored by network engineers and switch vendors to ensure that usage is within expected ranges. As usage increases, Verizon must purchase additional equipment and incur greater costs. For example, interoffice calling patterns that are higher than average will result in higher trunk termination investment. In addition, the original placement costs of individual components within the switch varies by usage. Line-related usage for customers with a calling volume of 5 CCS per line in the busy hour cost more than line-related usage for a customer who only uses 2 CCS per line.

Furthermore, Mr. Gillan and Mr. Chandler ignore that some types of switches are particularly affected by usage. Remote switches have “umbilicals” that connect them to their host switch, and these umbilicals are extremely sensitive to customer usage. A remote switch contains no interoffice trunks, so all traffic destined for a customer terminated anywhere except the remote switch must travel across these umbilicals. Any increase in host-to-remote traffic can overload the umbilicals, forcing additional equipment and risking switch exhaust.

III. USAGE-SENSITIVE SWITCHING COSTS SHOULD BE RECOVERED ON A PER-MOU BASIS, CONSISTENT WITH COST CAUSATION PRINCIPLES.

Q. IN LIGHT OF THE DISCUSSION ABOVE REGARDING THE TRAFFIC SENSITIVE NATURE OF MANY SWITCHING RESOURCES, WOULD A FLAT RATE FOR SWITCHING BE APPROPRIATE?

A. No, it would not be appropriate to implement a rate structure that is based solely on a flat-rate design.

Under existing TELRIC rules, it is not disputed that "incumbent LECs' rates for interconnection and unbundled elements must recover costs in a manner that reflects the way they are incurred."[6] If cost causation is not followed, artificial subsidies will develop. Because some switching resources are traffic sensitive, a flat switching rate would violate the principle of cost causation and allow subsidies between carriers and customers to occur.

Q. WOULD PUTTING ALL SWITCHING COSTS INTO A FLAT-RATE, PER PORT CHARGE, RATE HARM CERTAIN CARRIERS?

A. Yes. If all switching costs were recovered through a flat rate, per-port price, then the resulting flat-rate price must incorporate assumptions regarding the *average usage* across all customers (e.g., high use business customers and low volume residential customers). This would, of course, lead to a higher per port charge. While carriers, such as AT&T and MCI, that target higher than average volume business customers would avoid paying their fair share of the switching costs,

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6/ First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15874 ¶ 743 (1996) ("*Local Competition Order*").

smaller carriers, particularly those targeting low volume users, would be negatively affected because they would pay higher port charges to subsidize AT&T and MCI's customers. It makes much more sense to charge on a usage basis so that each CLEC pays for its fair share of the forward-looking costs that it (and its customers) causes Verizon NW to incur.

Q. ARE MR. GILLAN AND MR. CHANDLER'S OBSERVATIONS REGARDING THE PRICE STRUCTURES IMPOSED BY SWITCH VENDORS RELEVANT TO THE PROPER RATE STRUCTURE FOR UNBUNDLED SWITCHING?

A. No, the fact that switch vendors do not charge carriers by the minute of usage for the equipment they sell is not relevant to whether a flat rate for unbundled switching is appropriate. It is impractical and unnecessary for switch vendors to charge by the usage unit for their equipment. Although Mr. Gillan and Mr. Chandler refer to Qwest's switch purchasing practices, Verizon does not purchase switching equipment on a flat rated per line basis. As explained in the Verizon NW Recurring Cost Panel Direct Testimony, Verizon NW's switching cost studies reflect the overall discount Verizon NW actually receives for the purchase of switching equipment by vendor switch. Nonetheless, the vendors do charge different prices for different equipment components such as line peripherals. The fact remains that carriers do incur greater costs based on higher usage, as Mr. Gillan and Mr. Chandler admit, whether this is for a larger sized switch processor purchased before deployment, or line peripherals designed with lower line concentration ratios. Because Verizon NW incurs

greater costs based on increased usage, cost causation dictates that CLECs leasing unbundled switching from Verizon NW should pay on a usage basis.

Q. ARE VERIZON NW'S RETAIL RATE STRUCTURES RELEVANT TO THE APPROPRIATE RATE STRUCTURE FOR UNBUNDLED SWITCHING? (GILLAN-CHANDLER DIR. AT 19.)

A. No. The fact that local carriers may offer flat rate calling plans to their local customers is irrelevant to whether a flat rate is appropriate for UNE pricing. If Verizon decides to offer unlimited calling at a flat monthly rate to its retail customers, it does so based on a business judgment that, although it may not perfectly match costs with rates, it is the best rate to offer customers. This decision may incorporate a number of factors, such as expectations of average usage across customers. But all of these factors and decisions are made for retail purposes only and are entirely irrelevant to the proper price and rate structure for unbundled switching.

IV. VERIZON NW'S SWITCHING RATES SHOULD NOT BE DEAVERAGED.

Q. SHOULD SWITCHING RATES BE DEAVERAGED?

A. No. Only Staff proposes deaveraged switching rates. Deaveraged rates are appropriate only when they reflect geographic cost differences.[7] Whether the Commission employs an MOU-based switching rate or a flat rate based on

[7] *See* First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499 ¶¶ 764-65 (1996).

average usage volumes, there are no significant geographic differences in the costs of switching throughout Verizon NW's service areas. Mr. Spinks claims that there are material differences in switching costs between zones (Spinks Supp. Dir. at 17), but he does not explain what these are. Mr. Spinks presents no rationale for his deaveraging proposal and does not explain how he derived his proposed zones and rates. Furthermore, Mr. Spinks's results do not make sense. Mr. Spinks listed the number of lines in each Verizon NW switch in his deaveraging proposal, but there is no coherent correlation between line size and cost. For example, in Mr. Spinks's proposed Zone 3, the proposed cost for switches containing between 1,415 and 1,491 lines ranges from $3.13 to $11.35. (Spinks Supplemental Direct Testimony, workpaper "Vz_calculations_rev.xls" in tab "port_sw_cost.") Two switches that vary by only *two lines* have a $3.98 cost difference in Mr. Spinks's proposal.[8]

Mr. Spinks's proposal is premised on a flat rate for switching which, as this testimony has explained, does not accord with cost causation and incorrectly assumes that no switch resources have costs that fluctuate according to usage levels. Assuming that the non-traffic sensitive switch resources should be recovered through the port rate, and the traffic sensitive resources should be recovered through the MOU rate, it does not make sense to deaverage switching. There are no material differences for the port rate element. The cost

[8] A switch with 1,415 lines has a proposed cost of $7.37, while a switch with 1,417 lines has a proposed cost of $11.35. (Spinks Supplemental Direct Testimony, workpaper "Vz_calculations_rev.xls" in tab "port_sw_cost".)

for the truly non-traffic sensitive elements of a switch do not vary significantly between switches. The traffic sensitive element is specifically designed to account for any cost differences that exist due to variances in usage levels. Ultimately, however, there are no significant switching cost differences due to density zones that are not already accounted for in the traditional port/MOU rate structure.

V. CONCLUSION

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.