

**BEFORE THE**  
**WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**IN THE MATTER OF THE CONTINUED )**  
**COSTING AND PRICING PROCEEDING )**  
**FOR INTERCONNECTION, UNBUNDLED )**      **DOCKET NO. UT- 003013**  
**ELEMENTS, TRANSPORT AND )**                      **PHASE A**  
**TERMINATION, AND RESALE )**

**PHASE A REBUTTAL TESTIMONY OF**

**LARRY RICHTER**

**CONSULTANT – SERVICE COST**

**ON BEHALF OF**

**VERIZON NORTHWEST INC.**

**Formerly Known as GTE Northwest Incorporated**

**SUBJECT: COLLOCATION COST STUDY INPUTS**  
**&**  
**TECHNICAL ISSUES**

**AUGUST 4, 2000**

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**I. INTRODUCTION**

**PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Larry Richter. My business address is 600 Hidden Ridge, Irving, Texas 75038.

**ARE YOU THE SAME LARRY RICHTER WHO FILED PHASE A DIRECT TESTIMONY IN THIS MATTER?**

A. Yes, I am.

**ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?**

I am presenting testimony on behalf of Verizon Northwest Inc., which was formerly known as GTE Northwest Incorporated. The company recently changed its name after the closure of the merger between its parent company, GTE Corporation, and Bell Atlantic Corporation. The merged company name is Verizon Communications.

**IN YOUR TESTIMONY HOW DO YOU USE THE TERMS "VERIZON NW" AND "GTE"?**

My fellow witnesses and I use "Verizon NW" to refer to Verizon Northwest Inc., the company that is a party to this proceeding and on whose behalf we are testifying. I use "GTE" to refer to the former GTE companies, which are now part of the Verizon Communications companies along with the former Bell Atlantic companies. This will make clear that we are talking about cost studies and inputs that have been developed by and for the GTE telephone operating companies and about those companies' operations, practices and procedures.

**1 WHAT IS THE PURPOSE OF YOUR PHASE A REBUTTAL TESTIMONY?**

2 The purpose of my phase A rebuttal testimony is to address comments made by Roy Lathrop,  
3 on behalf of WorldCom; Rex Knowles, on behalf of NEXTLINK; John Klick, on  
4 behalf of COVAD and Rhythms Links; and David Griffith, on behalf of the  
5 Commission Staff, regarding inputs to Verizon NW’s collocation cost study.

6

7 **II. SPACE RENTAL COSTS**

8

**9 DOES VERIZON NW EXCLUDE ECONOMIES OF SCALE TO DEVELOP THE**

**10 “HVAC SHELL COST,” AS CLAIMED BY MR. LATHROP ON PAGE 9 OF**  
**11 HIS RESPONSE TESTIMONY?**

12 No. According to the RS Means publication utilized to develop this cost, one ton of HVAC is necessary to cool  
13 300 square feet increments of building space. To determine the cost per ton of HVAC we used the  
14 HVAC requirement for the Feather Sound Central Office building addition which provided 60 tons  
15 of HVAC and used RS Means to determine the cost. This cost would have included any economies  
16 of scale for providing a larger unit of HVAC contrary to Mr. Lathrop suggesting that the cost for  
17 HVAC was provided for 300 square feet only.

18

**19 MR. LATHROP CLAIMS AT PAGE 9 THAT VERIZON NW “DOUBLE COUNTED HVAC**  
**20 INVESTMENT BY ADDING BACK SOME HVAC TO ITS BUILDING INVESTMENT.”**

**21 DOES VERIZON DOUBLE COUNT HVAC COSTS?**

22 A. No. Verizon did not double-count HVAC costs. The 16 percent deducted from the  
23 total building investment represents the total portion associated with HVAC,

1 including the HVAC required for cooling the building shell and the  
2 telecommunications equipment.

3

4 The HVAC shell cost portion of the total HVAC costs is added back to the building investment to be  
5 recovered in the square foot cost because this portion of the HVAC is related to cooling the building  
6 based on weather elements, internal lighting, and other building elements.

7

8 The HVAC costs related to the cooling of ILEC and CLEC telecommunications equipment are  
9 contained in the Environmental Conditioning cost. This cost is based on the number of amps  
10 requested by a CLEC. There is a direct relationship between amps and the amount of heat these amps  
11 produce and the amount of cooling required to maintain a constant temperature.

12

13 **DOES VERIZON NW INCORRECTLY USE THE RS MEANS TO CALCULATE**  
14 **COSTS BY ADDING IN “OVERHEAD AND PROFIT” AS STATED BY MR.**  
15 **LATHROP ON PAGE 10?**

16 No. The calculations made by Verizon NW that use RS Means calculate the costs that  
17 Verizon NW would incur if the specified work were done by a contractor. The  
18 contractor would charge Verizon NW for the activities it performed, such as  
19 engineering, and would include an “Overhead and Profit” for their part of the job.  
20 This is part of the cost that Verizon NW would expect to incur in hiring a contractor,  
21 and is the “Overhead and Profit” component included in RS Means.

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**III. BUILDING MODIFICATION COSTS**

**Q. IS MR. LATHROP CORRECT IN STATING THAT THE SITE MODIFICATION COSTS AS IDENTIFIED BY VERIZON NW ARE DUPLICATIVE (pp. 10-12)?**

A. No. The “Site Modification” elements referred to by Mr. Lathrop, including costs “demolition and site work,” “dust partition,” and “ventilation ducts (Minor-HVAC)” are not duplicative. For each CLEC physical collocation provisioned within a central office building, construction activities must be undertaken to complete the request. These construction activities include the demolition and site work to ready a particular area of the central office for collocation. Because Verizon NW incurs these demolition and site work costs on a going-forward basis to provide collocation, it has included them in its collocation study.

The construction activities cause dust and other particles to be picked up by the HVAC and dispersed throughout the central office onto and in equipment throughout the central office (including CLEC equipment). The problem is compounded by fans surrounding equipment that draw the dust and particles into the equipment. In order to prevent dust and construction particles from getting on and into central office equipment, a dust partition is required around the construction area. Because Verizon NW incurs the costs of these dust partitions on a going-forward basis to provide collocation, it has included them in its collocation study.

**Q. IS THE “MINOR – HVAC” COST COMPONENT DUPLICATIVE OF OTHER HVAC COSTS AS ASSERTED BY MR. LATHROP?**

A. No. The Minor HVAC cost relates to minor duct work or diffuser rearrangements

1 that are necessary to provide cool air to the location where the CLEC has placed their  
2 equipment, and thus is different than the other HVAC costs discussed above.  
3 Ventilation ductwork is necessary to provide maximum cooling of the CLEC's  
4 equipment because the central office would not have been constructed with ductwork  
5 to cool all equipment placed within certain locations of the central office. Therefore,  
6 as changes are made within the central office, minor adjustments must be made to  
7 provide appropriate ventilation ducts.

8

9 **Q. IS THE “ENVIRONMENTAL CONDITIONING” COST COMPONENT**  
10 **DUPLICATIVE OF “MINOR HVAC” COSTS AS ASSERTED BY MR.**  
11 **LATHROP?**

12 A. No. The “environmental conditioning” costs include the *major* duct that is provided  
13 during the initial installation of the HVAC system that is necessary to provide cool  
14 air to the major parts of the building.

15

16 The major duct work included in the “environmental conditioning” costs is different  
17 than the adjustments to the minor duct work or diffuser rearrangements that are  
18 necessary as new equipment is placed in the office, and in order to get the cooling to  
19 the newly placed equipment. These adjustments are associated with the “Minor  
20 HVAC” element.

21

22 **Q. MR. KNOWLES CLAIMS, ON PAGE 10 OF HIS RESPONSE TESTIMONY,**

**1 THAT VERIZON NW ELIMINATES ECONOMIES OF**





1 architect draws the plans; and (3) a general contractor builds the cage enclosure based  
2 on the drawings.

3  
4 The purported bid mentioned by Mr. Knowles is based on the flawed assumption that  
5 ten contiguous 100 square foot cages will be built. Collocation cages, however, are  
6 built one at a time. Verizon NW does not perform speculative building of cages for  
7 several reasons. First, the CLEC decides the amount of space needed for their  
8 equipment, and it is not always 100 square feet. Second, with the provisioning of  
9 cageless collocation, there may not be a request for cages. Finally, virtual collocation  
10 may be the best alternative for a CLEC that wishes to only place a small amount of  
11 equipment in a central office. Thus, the economies of scale assumed in ten  
12 contiguous 100 square foot cages are unrealistic and inappropriate.

13

14 **V.FIBER CABLE SPLICING COSTS**

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16 **DOES VERIZON NW REQUIRE A SPLICE BE MADE TO THE CLEC'S FIBER**  
17 **THAT IS BROUGHT INTO THE CENTRAL OFFICE?**

18 No. It is Verizon NW's preferred method of provisioning that the CLEC provide a  
19 sufficient length of fiber cable from the first manhole outside the central office so  
20 that it can be pulled through the cable vault and through the central office to the  
21 CLEC location. Thus, GTE prefers that a CLEC's fiber brought into the central

1 office not be spliced. If the CLEC would prefer that the fiber be spliced in the cable  
2 vault and then extended to the collocator's equipment area, there is a cost in the cost  
3 study to accommodate this request.

4

5 **MR. KNOWLES ADVOCATES AT PAGE 12 THAT THE FIBER SPLICING RATES**

6 **IDENTIFIED IN VERIZON NW'S COLLOCATION COST STUDY ARE TO**  
7 **HIGH COMPARED TO A QUOTED RATE HE PROVIDES. IS HE**  
8 **CORRECT?**

9 A. No. It is unclear from Mr. Knowles' testimony what activities are included in the  
10 rate he quotes. The rate presented by Mr. Knowles may only be the rate to splice the  
11 fiber, excluding other valid costs such as travel, tools, truck, and other contractor  
12 items associated with fiber splicing.

13

14 Also, as noted above, Verizon NW does not advocate splicing the CLEC's fiber  
15 cable. Verizon NW, however, does provide a splicing cost in its Collocation Cost  
16 Study for cases in which the CLEC prefers the splicing method.

17

18 **VI. POWER CABLE COSTS**

19

20 **MR. GRIFFITH, AT PAGES 9-10 OF HIS DIRECT TESTIMONY, CRITICIZES**

21 **VERIZON NW'S DC POWER COSTS INCLUDING DERIVATION OF THE**

**1           LABOR REQUIRED TO INSTALL POWER CABLE. HOW DID VERIZON**  
**2           NW    DETERMINE    COSTS    ASSOCIATED    WITH    PULLING    POWER**  
**3           CABLE?**

**4** Verizon NW’s costs to pull power cable are based on Central Office Equipment Installers  
**5**       Hours per Unit (“HPU”), which were developed by field and support personnel who  
**6**       have responsibility for central office installation. The HPU for pulling power cable  
**7**       was based on pulling various size power cables. The larger the size of the power  
**8**       cable and the longer the distance of the pull, the more difficult the process becomes  
**9**       and the more personnel are needed to perform the activity. Once the cable is pulled,  
**10**      it must be attached to the cable rack; separate cable racking is necessary because  
**11**      power cable cannot be run among or included with other transmission cables. Power  
**12**      cable cannot be run among or included with other transmission cables because of  
**13**      power influence on the transmission cables.

**14**

**15 Q.    AT PAGE 10, MR. GRIFFITH CRITICIZES VERIZON NW’S**  
**16       CONSIDERATION    OF    A    CABLE    PULL    OF    246    FEET    AS**  
**17       UNREASONABLE. HOW WAS THE 246 FEET FIGURE DERIVED?**

**18 A.**    The power cable referred to by Mr. Griffith is the power cable from the Battery  
**19**       Distribution Fuse Bay (“BDFB”) to the collocators’ equipment. Verizon NW studied  
**20**       the distance from the BDFB to the collocators’ equipment, and determined that this  
**21**       distance is an average of 123 feet. Because power requires two cables, a positive and

1 a negative cable, 246 feet of cable is required to run between the BDFB and the  
2 collocators' equipment.

3

4 **MR. GRIFFITH CLAIMS THAT THE COSTS SUPPORTING VERIZON NW'S**  
5 **PROPOSED MONTHLY RECURRING CHARGES ARE NOT**  
6 **WASHINGTON-SPECIFIC (P. 11). ARE THE COSTS IN VERIZON NW'S**  
7 **COLLOCATION COST STUDY WASHINGTON-SPECIFIC?**

8 Yes. Verizon NW's collocation costs are either actual costs for provisioning collocation or  
9 are cost estimates taken from RS Means or the National Construction Estimator  
10 ("NCE"), two industry-accepted manuals. In either case, the collocation costs have  
11 been adjusted to reflect Washington-specific costs. If an actual cost is used in the  
12 study based on Verizon NW's experiences in states such as California and Texas, RS  
13 Means or NCE were used to convert the cost to a Washington-specific cost. This  
14 conversion was done by: (1) converting the actual cost to a national average cost and  
15 (2) adjusting the national average cost to a Washington-specific cost by using the  
16 percentage in RS Means or NCE reflecting the relationship of Washington-specific  
17 costs to the national average. This same procedure was used to derive Washington-  
18 specific costs for those costs originally calculated from RS Means or NCE.

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20 **VII.CABLE RACK OCCUPANCY**

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1 **MR. KLICK ASSERTS THAT ILEC COST MODELS “OVERSTATE COSTS BY**  
2 **ASSUMING THAT RELAY AND CABLE RACKS WILL HAVE TO BE**  
3 **INSTALLED FOR THE EXCLUSIVE USE OF A SINGLE COMPETING**  
4 **CLEC, OR A SMALL NUMBER OF CLECS, INSTEAD OF SHARING**  
5 **RACKS BETWEEN COMPETITORS AND THE ILEC” (p. 12). IS THIS**  
6 **CORRECT?**

7 No. Each CLEC uses various types of equipment, and will design their own physical layout  
8 of the equipment based on the size of the area that the CLEC requests. There is no  
9 way for Verizon NW to predict where a CLEC will collocate or what types of  
10 equipment will be collocated such that it could pre-place relay or cable racks to  
11 obtain the economies of scale purported to be possible by Mr. Klick. Moreover, even  
12 an ILEC did speculate in order to pre-place relay or cable racks, it would likely have  
13 to re-arrange this placement when confronted with actual CLEC requests, thus adding  
14 – not decreasing – to collocation costs.

15  
16 Because a CLEC’s collocation request is based on the equipment they plan to utilize,  
17 the preferred method of provisioning is for the CLEC to provide their own relay racks  
18 placed in the collocation area at their design and adapted to their type of equipment.  
19 In fact, many types of the telecommunications equipment comes already mounted in  
20 relay racks.

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**VIII. BUILDING RENOVATION COSTS**

**MR. KLICK SUGGESTS AT PAGE 13 THAT BUILDING COSTS INCURRED BY VERIZON NW ARE PASSED ON TO THE CLEC FOR PAYMENT AS COLLOCATION COSTS. IS HE CORRECT?**

No. Only those costs related to provisioning collocation are included in the cost study. For example, Mr. Klick suggests that exterior door installation costs are included in Verizon NW’s Collocation Cost Study as security costs. The cost to place an exterior door, however, is not included in Verizon NW’s Collocation Cost Study. If a CLEC requests a private entrance, the matter would be discussed at that time and the appropriate costs would be borne by the CLEC.

**MR. KLICK ALSO SUGGESTS THAT VERIZON NW FORCES CLECS TO PAY FOR NEW CORRIDORS AND HALLWAYS AS COLLOCATION COSTS FOR SECURITY. IS HE CORRECT?**

No. All costs associated with provisioning collocation are identified in the EIS collocation cost study. There are security items, which control entrance facilities such as card readers and access card functions, and then the provisioning for locking cabinets within the central office to secure equipment and sensitive information.

**Q. MR. KLICK ALSO IMPLIES THAT VERIZON NW CHARGES CLECS FOR**

**1 BUILDING CODE CHANGES THAT REQUIRE BUILDING**  
**2 MODIFICATIONS. IS THAT TRUE?**

**3 A.** No. The only building modification costs passed on to the CLEC are those costs  
**4** directly related to provisioning collocation, including the specific manner in which  
**5** the CLEC would like to do business within the central office.

**6**

**7 DOES THIS CONCLUDE YOUR PHASE A REBUTTAL TESTIMONY?**

**8 A.** Yes.