

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

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

PHASE A RESPONSIVE DIRECT TESTIMONY OF

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DIRECTOR-NETWORK PLANNING

ON BEHALF OF

VERIZON NORTHWEST INC.

Formerly Known as GTE Northwest Incorporated

SUBJECT: LINE SHARING TECHNICAL ISSUES

JULY 21, 2000

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I.INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND TITLE.

A. My name is Russell A. Bykerk. My business address is 545 East John Carpenter Freeway, Irving, Texas 75062. I am employed by GTE Network Services as Director - Network Planning.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I received a Bachelor of Science in Electrical Engineering in 1985 from Michigan State University. In January 1988, I earned a Master's degree in Business Administration from Indiana Wesleyan University. I joined GTE in March of 1985 as an engineer trainee. Since 1985, I have held many positions in GTE in which I was responsible for network engineering and planning. During my tenure with GTE, I have obtained experience in digital switching systems, transmission systems, and access plant design and construction. In my current position, I am responsible for access and transport technology implementation.

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

1 Atlantic companies. This will make clear that we are talking about cost studies and inputs that have
2 been developed by and for the GTE telephone operating companies and about those companies'
3 operations, practices and procedures.

4
5 **Q. WHAT IS THE PURPOSE OF YOUR PHASE A RESPONSIVE DIRECT TESTIMONY?**

6 A. The purpose of my testimony is twofold. First, I will be adopting the direct testimony
7 of Stephen L. Schroeder submitted in Phase A of this proceeding. Second, I will
8 respond to the following topics addressed by Michael Zulevic on behalf of Rhythms
9 Links Inc. and COVAD Communications Company: 1) provision of Verizon NW-
10 owned splitters on a shelf-at-a-time basis, 2) installations of splitters on the main
11 distribution frame (“MDF”), and 3) test access to the splitter.

12

13 **II. VERIZON NW-OWNED SHELF-AT-A-TIME SPLITTERS**

14

15 **Q. WHAT IS VERIZON NW’S POSITION WITH REGARD TO OWNERSHIP**
16 **OF SPLITTERS?**

17 A. As discussed in Verizon NW witness John Boshier’s phase a direct testimony, the Company proposes
18 that the Competitive Local Exchange Carrier (“CLEC”) provide its own splitters.

19

20 **Q. FROM A TECHNICAL PERSPECTIVE, IF VERIZON NW WERE**
21 **REQUIRED TO OWN AND PROVIDE SPLITTERS TO CLECS FOR THE**
22 **PURPOSE OF LINE SHARING, WHAT CONFIGURATION WOULD IT**
23 **PROPOSE?**

1 A. If the Company were required to provide splitters to CLECs, Verizon NW recommends that such
2 splitters be provided from a common pool of splitters on what is commonly referred to as a “port-at-a-
3 time” basis. Splitters from the common pool would be made available to CLECs on a first-come, first-
4 served basis.

5

6 **Q. PLEASE EXPLAIN WHY VERIZON NW FAVORS PROVIDING**
7 **SPLITTERS TO CLECS ON A “PORT-AT-A-TIME” BASIS FROM A**
8 **COMMON POOL OF SPLITTERS RATHER THAN DEDICATING FULL**
9 **SHELVES (“SHELF-AT-A-TIME”) OF SPLITTERS TO INDIVIDUAL**
10 **CLECS?**

11 A. Having a common pool of Verizon NW-owned splitters for all CLECs to share is the most efficient
12 means of providing splitters within the central office. If the Verizon NW-owned splitters were
13 dedicated to specific CLECs, the CLECs would have to provide a projection of their expected demand,
14 and Verizon NW would have to allocate splitters. Verizon NW would have to monitor individually
15 the utilization of each pool of CLEC splitters and have a means of adjusting (up or down) the number
16 of splitters dedicated to each CLEC. Presently, GTE’s administrative and provisioning systems are
17 not capable of administering splitters in this fashion. Even if GTE’s systems had such a capability,
18 there is a risk of exhausting splitters in a given CLEC splitter pool, thus denying service, while splitters
19 in another CLEC pool are under utilized. When splitters are provided to CLECs on a “port-at-a-time”
20 basis from a common pool, any CLEC has access to any splitter in the common splitter pool, and such
21 risks are reduced.

22

23 **Q. IN WHAT OTHER WAYS IS A VERIZON NW-OWNED COMMON**
24 **SPLITTER POOL MORE EFFICIENT?**

1 A. If pools of splitters are allocated to specific CLECs, as end-users migrate their DSL data services from
2 CLEC A to CLEC B, the three jumpers -- 1) from the Verizon NW switch to the splitter, 2) from
3 Verizon NW cable pair to the splitter, and 3) from the CLEC's collocation block to the splitter --
4 associated with CLEC A's splitter must be removed, and three new jumpers must be run to a splitter
5 in CLEC B's splitter pool. For the period of time it takes to remove and rerun the jumpers associated
6 with the voice service, the end-user's voice service will be interrupted. However, with a common pool
7 of splitters, if the end-user migrates from CLEC A to CLEC B, only the one jumper associated with
8 the high frequency data (the jumper from the CLEC collocation block to the splitter) has to be
9 relocated, and the voice service remains intact.

10

11 **III. SPLITTERS INSTALLED ON THE MDF**

12

13 **Q. IN MR. ZULEVIC'S PHASE A DIRECT TESTIMONY, HE INDICATES**
14 **THAT MOUNTING THE SPLITTERS ON THE MDF IS THE MOST**
15 **EFFICIENT METHOD OF DESIGNING, INSTALLING, AND**
16 **CONNECTING SPLITTERS. CAN YOU EXPLAIN WHY VERIZON NW**
17 **SELECTED THE BAY MOUNTED SPLITTER OVER THE MDF MOUNTED**
18 **SPLITTERS?**

19 A. Yes. As Verizon NW explained throughout its negotiations with CLECs, the MDF mounted splitter
20 takes up to three times more mounting space on the MDF than do bay mounted splitters. This is a very
21 inefficient use of the MDF.

22

23 **Q. HAS VERIZON NW USED MDF MOUNTED SPLITTERS FOR ITS OWN**
24 **RETAIL ADSL SERVICES?**

1 A. Yes. With its initial implementation of ADSL, Verizon NW did use MDF mounted splitters.
2 However, Verizon NW has recognized the inefficiency of such a configuration and has migrated to
3 bay mounted splitters for its own retail applications.

4 **Q. ARE THERE ANY OPERATIONAL DISADVANTAGES ASSOCIATED**
5 **WITH MDF MOUNTED SPLITTERS?**

6 A. Yes. The bay mounted splitter shelf includes a voice path cut through capability that is not provided
7 with the MDF mounted splitter. If the splitter card has to be removed for maintenance purposes, there
8 are contacts on the splitter shelf that will come together or close when the splitter card is removed.
9 This closure of the contacts permits the voice path to the central office switch to remain intact while
10 the splitter card is removed from the shelf. As noted earlier, the MDF mounted splitter does not have
11 this feature. In order to perform maintenance on MDF mounted splitters, the central office technician
12 must manually jumper / strap the cable pair and switch port terminals together on the MDF splitter
13 block for each of the two splitters located on the splitter card. When the splitter card is replaced, these
14 temporary jumpers / straps must be removed. This operation is both time consuming and subject to
15 technician error. With bay mounted splitters, the time to place the temporary jumper / strap and
16 potential for technician error is eliminated. So from both MDF space management and operations
17 perspective, the application of bay mounted splitters are more efficient.

18

19 **IV. TEST ACCESS TO THE SPLITTERS**

20

21 **WHAT IS MR. ZULEVIC'S POSITION ON TEST ACCESS?**

22 He seeks direct access to Verizon NW's testing equipment. This includes access to Verizon NW's testing
23 systems via a web graphical user interface ("GUI") or other interface, as well as direct physical access
24 to the MDF in the Verizon NW central office.

25

1 **WHY DOES HE SEEK THIS ACCESS?**

2 Mr. Zulevic asserts that CLECs need the capability to test the entire electrical makeup of the loop, including
3 the voice and data spectrum, in order to provide quality service to their customers. Also, Mr. Zulevic
4 seeks this direct access for purposes of trouble isolation to verify that CLECs are working on the
5 correct line and that proper cross connects have been made.

6

7 **Q. IS PHYSICAL ACCESS NECESSARY TO OBTAIN THESE**
8 **CAPABILITIES?**

9 A. No. Verizon NW will provide access to its 4-Tel loop testing system via Verizon
10 NW's internet-based GUI Wholesale Internet Service Engine ("WISE"). WISE is the
11 means of access to Verizon NW's other operations support systems. Access to 4-Tel
12 provides CLECs with the capability to test the voice band frequency of the loop path
13 from Verizon NW's switch, through the splitter, to the end user premises. Testing
14 of the high frequency band is accomplished at the CLEC's collocation cage using
15 equipment of its choice.

16

17 **Q. WHAT TESTS DOES 4-TEL PERFORM?**

18 A. Verizon NW's 4-TEL system provides all appropriate POTS measures. These
19 include AC/DC, insulation/conductor leakage, balance, noise, resistive fault,
20 conductance and length. The results of the loop test are available via the WISE
21 interface to the 4-Tel test system on a per-line basis. To date, I have heard no CLEC
22 objections voiced to this arrangement.

1

2 **Q. WHAT INFORMATION HAS VERIZON NW PROVIDED THE CLECS CONCERNING ITS**
3 **WISE ACCESS TO THE 4-TEL TEST SYSTEM?**

4 A. Verizon sponsored a joint Line Sharing Workshop in Irving, Texas, on February 22, 2000, in which
5 numerous CLECs participated. At the workshop, Verizon demonstrated its WISE access to the 4-TEL
6 mechanized test system.

7

8 **Q. DID VERIZON PROVIDE ANY FURTHER DEMONSTRATION OF ITS 4-TEL TESTING**
9 **SYSTEM FOR THE BENEFIT OF CLECS?**

10 A. Yes. During the March 8 and 9, 2000 negotiation session held in San Francisco as part of the
11 California Line Sharing arbitration proceeding, the parties discussed the CLECs' desire to have
12 physical access to the line sharing cable pair for testing. Verizon's position was that access to 4-Tel
13 via WISE provided the ability to test the voice frequency of the entire loop and therefore eliminated
14 the need to have direct physical access to the cable pair to test the voice frequency. To confirm this,
15 Verizon agreed to conduct a demonstration at one of its central offices involved in the Line Sharing
16 Trial. All in attendance concurred that the demonstration would be a good idea. The attendees agreed
17 to conduct this test on March 16, 2000 at Verizon's Del Rey central office in Marina Del Rey,
18 California. Each of the CLECs participating in the Line Sharing Trial has a point of collocation at the
19 Del Rey central office.

20

21 **Q. WHAT CLECS WERE REPRESENTED AT THE 4-TEL DEMONSTRATION**
22 **IN DEL REY, CALIFORNIA?**

23 A. Covad and Rhythms participated.

24

25 **Q. DID THIS TEST INDICATE WHETHER VERIZON'S 4-TEL TESTING**

1 **SYSTEM PROVIDES CLECS WITH THE LOOP TESTING CAPABILITIES**
2 **THEY DESIRE?**

3 A. Yes. All parties to the 4-TEL demonstration at the Verizon Del Rey, California central office
4 indicated their satisfaction with the 4-TEL test data. I have attached a copy of the demonstration
5 report as Exhibit No. RAB-2C.

6
7 **Q. DOES ACCESS TO TESTING VIA 4-TEL SATISFY THE REQUIREMENTS**
8 **OF THE FCC LINE SHARING ORDER?**

9 A. Yes. The Line Sharing Order requires incumbent local exchange carriers (“ILECs”) to provide loop
10 access for purposes of testing either through a cross-connection in the CLEC’s collocation space or
11 through a standardized interface (Line Sharing Order, ¶118. From a technical perspective, access to
12 the 4-TEL loop testing mechanism satisfies the requirements of the Line Sharing Order.

13
14 **Q. WILL THE CLECS BE ABLE TO PERFORM “HIGH-FREQUENCY”**
15 **TESTING FROM THEIR POINT OF COLLOCATION, WITHOUT HAVING**
16 **PHYSICAL ACCESS TO THE LOOP FACILITY?**

17 A. Yes. Such testing can be performed from the CLEC’s point of collocation. This will be done via
18 equipment of the CLEC’s choice.

19
20 **Q. IF THE CLEC'S TECHNICIAN WERE PERMITTED DIRECT ACCESS TO**
21 **ITS EQUIPMENT ON VERIZON NW'S MDF, COULD HE VALIDATE THE**
22 **CUSTOMER'S LINE VIA THE AUTOMATIC NUMBER IDENTIFICATION**
23 **(“ANI”) FEATURE AND CONFIRM THAT THE PROPER**
24 **CROSS-CONNECTS WERE MADE?**

1 A. No. The Verizon NW splitter includes a blocking capacitor in the high frequency path. The purpose
2 of the blocking capacitor is to prevent any physical faults that may occur within the CLEC's DSLAM
3 equipment from interfering with Verizon NW's voice service. The presence of the blocking capacitor
4 will prevent the CLEC from being able to access the ANI test, and thus it will not be able to confirm
5 that the jumpers to the CLECs' facility had been properly run. Even if the CLEC's technician were
6 able to validate the end-user's telephone number from its collocation block on the MDF, he would
7 have no knowledge of the proper cable pair or splitter assignment locations on the Verizon NW MDF.
8 Without this information, the CLEC technician would not be able to validate that the jumpers were run
9 to the correct locations. The alternative would be for the CLEC technician to manually trace the
10 jumpers on the Verizon NW MDF, performing the ANI validation test at each jumper termination
11 point. This type of trouble isolation activity is highly prone to causing trouble and interfering with
12 other customers' services. Connections could be inadvertently broken or jumpers incorrectly placed
13 on the wrong block pins, following testing.

14

15 **Q. DOES THE PRESENCE OF THE BLOCKING CAPACITOR INTERFERE**
16 **WITH THE CLEC'S HIGH FREQUENCY SIGNALS?**

17 A. No. The blocking capacitor will not interfere with the CLEC's DSL service. Verizon NW's ADSL
18 services use the same splitter, with blocking capacitor, that Verizon NW is planning to use with the
19 CLECs' line sharing service.

20

21 **Q. SHOULD VERIZON NW BE REQUIRED TO PROVIDE CLECS DIRECT**
22 **ACCESS TO THE PHYSICAL CABLE PAIR IN LIEU OF TEST ACCESS TO**
23 **4-TEL VIA THE WISE INTERFACE?**

24 A. No. In order to provide direct access to the splitter, Verizon NW would have to modify its network
25 design for providing line-sharing splitters and incur significant additional cost. Verizon NW's current

1 design is to terminate splitter blocks directly to the MDF (See Exhibit No. RAB-3). This is consistent
2 with the method Verizon NW currently uses to terminate CLEC cross-connect facilities to its MDF.
3 Verizon NW does not permit CLECs to access the MDF for the reasons stated previously. Therefore,
4 to provide the CLECs direct access to the cable pair side of the splitter, the splitter would have to be
5 terminated on an intermediate distribution frame (“IDF”) (see Exhibit No. RAB-4). The addition of
6 the IDF would add more cost to the line sharing network design because of the additional points of
7 termination and the cost of the IDF itself.

8

9 **Q. DOES THIS CONCLUDE YOUR PHASE A RESPONSIVE DIRECT**
10 **TESTIMONY?**

11 A. Yes.