

**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

Petition by DIECA Communications, Inc.)
d/b/a Covad Communications Company for)
Arbitration of Interconnection Rates, Terms,)
and Conditions and Related Arrangements)
with Verizon Florida Inc. Pursuant to)
Section 252(b) of the Telecommunications)
Act of 1996)

Docket No. 020960-TP

DIRECT TESTIMONY OF

DON ALBERT

AND

ALICE B. SHOCKET

ON BEHALF OF

VERIZON FLORIDA INC.

SUBJECT: ISSUE NOS. 41, 43, 45-49

JANUARY 17, 2003

DOCUMENT NUMBER-DATE

00539 JAN 17 8

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1 **DIRECT TESTIMONY OF DON ALBERT AND ALICE B. SHOCKET**

2

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

4 A. My name is Don Albert. My business address is 600 East Main Street,
5 Richmond, Virginia 23219.

6

7 **Q. BY WHOM ARE YOU CURRENTLY EMPLOYED?**

8 A. I am currently employed by Verizon Services Corp. I am testifying in this
9 arbitration on behalf of Verizon Florida Inc. ("Verizon").

10

11 **Q. WHAT ARE YOUR CURRENT DUTIES AND RESPONSIBILITIES?**

12 A. Currently I am Director – Network Engineering for Verizon Network
13 Services. In this position, I am directly involved in the negotiation of
14 interconnection agreements and the network implementation of
15 alternative local exchange carrier ("ALEC") interconnection and
16 unbundling arrangements, including dark fiber, throughout the Verizon
17 footprint.

18

19 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
20 **WORK EXPERIENCE.**

21 A. I received a Bachelor of Science Degree in Civil Engineering from Virginia
22 Tech in 1977. I have more than 25 years of experience in the
23 telecommunications industry as an employee of Verizon and its
24 predecessor companies. During that time, I have held various positions
25 of increasing responsibility in Network Operations, Network Engineering,

1 Network Planning, and Sales. I have been in my present position for five
2 years.

3

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

5 A. My name is Alice B. Shocket. My business address is 125 High Street,
6 Boston, Massachusetts 02110.

7

8 **Q. BY WHOM ARE YOU CURRENTLY EMPLOYED?**

9 A. I am currently employed by Verizon Services Corporation. I am testifying
10 in this arbitration on behalf of Verizon Florida Inc. ("Verizon").

11

12 **Q. WHAT ARE YOUR CURRENT DUTIES AND RESPONSIBILITIES?**

13 A. I currently serve as Senior Specialist – Interconnection Services for the
14 Verizon Services Group. In that capacity, I am responsible for developing
15 and implementing dark fiber and local number portability throughout the
16 Verizon footprint.

17

18 **Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

19 A. I have more than 30 years of experience in the telecommunications
20 industry as an employee of Verizon and its predecessor companies.
21 During that time, I have held various positions of increasing responsibility
22 related to customer services, regulatory matters, marketing, access,
23 interconnection services, number portability, and, most recently, dark
24 fiber. I received a Bachelor of Arts degree in Economics from
25 Northeastern University.

1 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

2 A. We are providing this testimony in support of the positions of Verizon on
3 Issue Nos. 41, 43, and 45 through 49 in the arbitration between Verizon
4 and DIECA Communications, Inc. d/b/a Covad Communications
5 Company ("Covad"). These issues concern certain disputed provisions in
6 the UNE Attachment to the proposed Interconnection Agreement that
7 involve Verizon's provision of dark fiber as an unbundled network element
8 ("UNE").

9

10 **ISSUE NO. 41 — ACCESS TO PARTIALLY CONSTRUCTED FIBER**

11

12 **Q. WHAT IS THE DISPUTE WITH RESPECT TO ISSUE NO. 41?**

13 A. Issue No. 41 of Covad's Petition concerns the definition of dark fiber in
14 the Interconnection Agreement. It is our understanding that, under
15 applicable law, fiber must be physically connected to Verizon's network
16 and easily called into service before it is a network element that Verizon
17 must provide to ALECs on an unbundled basis. Covad, however, is
18 seeking access to what it calls "unterminated fiber" — that is, fiber that is
19 not terminated at an accessible terminal in Verizon's network.

20

21 **Q. PLEASE IDENTIFY OR DESCRIBE THE AREAS OF VERIZON'S**
22 **NETWORK WHERE FIBER OPTIC FACILITIES ARE EMPLOYED.**

23 A. Verizon deploys fiber optic cables as a transmission medium in two
24 separate and distinct areas of its network. The principal application for
25 fiber optic cables is in Verizon's interoffice facility ("IOF") network, which

1 connects Verizon's central offices to one another. The second principal
2 use of fiber is in Verizon's loop network, where fiber is employed in an
3 outside plant feeder route to connect a Verizon central office primarily to
4 Digital Loop Carrier ("DLC") sites (where remote electronics are placed).

5

6 **Q. ARE THERE DIFFERENCES IN THE WAYS VERIZON PLANS AND**
7 **CONSTRUCTS FIBER OPTIC FACILITIES IN THE LOOP FEEDER**
8 **NETWORK VERSUS THE INTEROFFICE FACILITY NETWORK?**

9 A. In the loop feeder network, Verizon constructs sections of loop fiber optic
10 cables in stages, which can occur over a number of years by extending or
11 adding to existing fiber optic cables into new geographic areas to
12 accommodate changing needs. Existing fiber optic cables are extended
13 by placing new fiber optic cables — which are either placed in
14 underground conduit or on aerial pole lines, or which are buried in the
15 ground — and splicing them permanently together, typically using the
16 construction technique called mass-fusion splicing. These fiber optic
17 splice points are created as permanent connections where the fibers are
18 welded together as part of the construction or building of Verizon's loop
19 feeder fiber optic network. A primary driving force behind the deployment
20 and ongoing expansion of Verizon's loop fiber cables has been the need
21 to deploy Digital Loop Carrier systems to serve plain old telephone
22 service ("POTS") growth in specific geographic areas. Fiber optic loop
23 feeder cables provide cost effective transmission facilities for Digital Loop
24 Carrier systems.

25

1 **Q. HOW DOES THIS DIFFER FROM THE CONSTRUCTION OF FIBER**
2 **OPTIC CABLES IN VERIZON'S INTEROFFICE FACILITY FIBER**
3 **OPTIC NETWORK?**

4 A. Unlike the deployment of fiber optic cables in Verizon's loop feeder
5 network, construction of fiber cables in Verizon's interoffice facility
6 network generally occurs over a shorter period of time, starting with fiber
7 optic cable placements at the "A" central office end and working toward
8 the "Z" central office end until continuous fibers are constructed between
9 the Fiber Distribution Frame ("FDF") in central office "A" and the Fiber
10 Distribution Frame in central office "Z." Typically, it takes Verizon
11 approximately one year to construct an interoffice facility fiber optic cable
12 span (from final funding approval to construction completion). However, if
13 significant structure work also is involved, for example construction of
14 pole lines or conduit construction, the time frame could range up to two
15 years. During construction of fiber optic cables in Verizon's interoffice
16 facility network, the fiber cables also are permanently spliced together via
17 mass-fusion splicing where, once again, the optical fibers are welded
18 together.

19
20 **Q. WHAT TYPES OF FIBER OPTIC CABLE AND FIBER OPTIC CABLE**
21 **SPLICING TECHNIQUE DOES VERIZON USE?**

22 A. Verizon typically places "ribbon" fiber optic cables because they are the
23 most economical to construct and maintain. These cables are
24 permanently spliced (*i.e.*, welded) together using mass-fusion splicing. A
25 fiber optic cable sheath will usually contain one or more ribbons of glass

1 fiber strands, with 12 glass fibers in each ribbon. Visually, this ribbon
2 looks like 12 glass strands between two pieces of transparent adhesive
3 tape. Before Verizon moved to use ribbon fiber optic cables, Verizon
4 used some fiber cables known as "loose tube" fiber cables. With loose
5 tube fiber cables, a cable sheath contained a number of individual fiber
6 "buffer tubes," which typically contained 12 individually coated or
7 protected glass fiber strands.

8
9 **Q. PLEASE DESCRIBE WHAT IS MEANT BY THE PHRASE**
10 **"TERMINATED" FIBER OPTIC STRANDS.**

11 **A.** In the context of this testimony, a terminated fiber optic strand is a strand
12 that is connected to an accessible terminal at both ends. Accessible
13 terminals typically include hardware such as Fiber Distribution Frames,
14 fiber patch panels, and LGX equipment. These accessible terminals
15 specifically are designed to permit rapid and repeated connection and
16 disconnection of fiber optic strands, as well as provide a location for initial
17 acceptance testing and subsequent repair testing activities. More
18 specifically, a terminated interoffice fiber strand is a continuous strand
19 that is connected to a central office Fiber Distribution Frame at both ends.
20 In contrast, a terminated loop fiber strand is a continuous strand that is
21 connected to a central office Fiber Distribution Frame (at one end) and an
22 accessible terminal (either at a Digital Loop Carrier field electronics site or
23 at a customer premises) at the other end. Terminated fibers may be used
24 by either Verizon or ALECs without any further construction activities.
25 They have been tested (and accepted) as conforming to Verizon's

1 engineering design at the time they were initially constructed (terminated
2 on both ends). Terminated fibers are placed into service by Verizon by
3 issuing internal optical orders, or ALEC service orders, and are activated
4 (connected to their associated fiber optic electronics) by making fiber
5 optic cross-connects.

6

7 **Q. HOW WOULD VERIZON DESCRIBE AN INDIVIDUAL FIBER OPTIC**
8 **STRAND IN A SHEATH THAT WAS NOT TERMINATED AT BOTH**
9 **ENDS?**

10 A. In general, situations in which fiber strands have not been terminated on
11 both ends (what some ALECs call "unterminated" fiber) occur when loop
12 fiber strands still are under construction, which, as noted earlier in this
13 testimony, can take several years or more to complete. Verizon does not
14 endorse the use of this term as it implies that Verizon has intentionally left
15 fiber in an "almost complete" state in an effort to "hide" it from ALECs. To
16 the contrary, as described more fully below, fiber cables necessarily are
17 constructed and extended over many years to accommodate growth and
18 economical loop transport modernization opportunities. In our
19 experience, ALECs have apparently applied the label "unterminated fiber"
20 to at least three distinctly different network configurations.

21

22

23

24

25

1 Q. WHAT ARE THE THREE NETWORK CONFIGURATIONS THAT
2 ALECS APPEAR TO HAVE DESCRIBED AS “UNTERMINATED”
3 FIBER?

4 A. The first configuration appears to involve a loop fiber strand that is only
5 terminated at one end (in a Verizon central office). The other end of the
6 strand would stop out in the loop fiber network (typically at a “branch”
7 splice location), where the entire complement of individual fibers in a
8 cable sheath would *not* be spliced to another fiber optic cable. This
9 configuration describes the most frequent occurrence of “unterminated”
10 fiber optic strands in Verizon’s network. As discussed earlier, loop fiber
11 optic cables are constructed and extended into new geographic areas in
12 stages and in discrete sections, which can occur over several or more
13 years. For example, a 144-strand loop fiber cable might run three miles
14 out in a westerly direction from a Verizon central office to a branch
15 location in the feeder route. Future combined needs along this entire
16 route justify the placement of 144 fibers, but present needs might only
17 require that 48 of the fiber strands (in the 144-strand cable) be spliced to
18 a 48-strand fiber cable headed in a southerly direction. The remaining 96
19 “unterminated” strands, in this example, would be awaiting the future
20 placement and construction of additional fiber cables (that may head in a
21 northerly or westerly direction) at which point some (or all) of the 96
22 “unterminated” strands would be extended (eventually towards a loop
23 fiber accessible terminal) by splicing them to new/additional fiber optic
24 cables. Thus, the 96 fibers in this example are not “unterminated,” but
25

1 are more accurately described as “under construction” because there is
2 presently nothing on which to terminate these 96 fibers.

3

4 The second configuration referred to as unterminated fibers appears to
5 involve a loop fiber strand that is only terminated at one end in the loop
6 fiber feeder network (but not at the Verizon central office). This
7 configuration occurs less frequently. The strand could be terminated at
8 an accessible terminal at a Digital Loop Carrier remote terminal site, or at
9 a customer premises, but something less than the full complement of
10 fibers in the sheath would be spliced to the loop feeder fiber cable at the
11 first splice (heading back toward the central office) coming out of the
12 Digital Loop Carrier site. An example of this configuration would be a 24-
13 strand fiber cable run into a Digital Loop Carrier Precast Concrete Hut,
14 with all 24 fibers connected to a fiber patch panel in the hut, but with only
15 12 fiber strands spliced into the loop fiber feeder cable at the splice
16 location where the 24-strand fiber cable intercepts the (larger) fiber feeder
17 cable. These situations typically occur due to structure limitations
18 (conduit and pole lines) entering the Digital Loop Carrier site, or a
19 customer premises, that dictate selection of an available larger sized
20 cable because it may be difficult or impossible to come back later to
21 augment the cable if more fibers are needed. If or when needed at some
22 point in the future, Verizon could complete construction of the
23 “unterminated” fibers in this example by placing and/or splicing
24 new/additional fiber cables back toward the central office, which then

1 would also be spliced to the "unterminated" fiber strands contained in the
2 24-strand fiber cable running into the Precast Concrete Hut.

3

4 Finally, the third configuration referred to as "unterminated" fibers
5 appears to involve a loop fiber strand that is not terminated on either end.
6 This configuration rarely occurs. An example would be a bridge crossing
7 in the loop fiber feeder network, with limited conduit available going over
8 the bridge. As noted in a previous example, limited or costly
9 opportunities to return later to augment the size of the cable going over
10 the bridge will dictate selection for initial placement of a larger fiber cable.
11 Thus, Verizon might have a 72-strand loop fiber cable leading up to the
12 bridge, and then a 144-strand fiber cable across the bridge, followed by
13 another 72-strand loop fiber cable that continued further into the loop fiber
14 feeder route beyond the bridge. On the bridge itself, 72 fibers would be
15 terminated on both ends, but another 72 would not be spliced on either
16 end.

17

18 **Q. WHAT WORK WOULD VERIZON HAVE TO UNDERTAKE TO BUILD**
19 **"UNTERMINATED" LOOP FIBER STRANDS INTO TERMINATED/**
20 **USEABLE FIBER STRANDS?**

21 A. In each of the three configurations described above, Verizon normally
22 would have to engineer, place, and/or splice additional loop fiber optic
23 cables from the "unterminated" end(s) of the fiber optic cable to an
24 accessible terminal(s), and then perform fiber strand acceptance testing
25 as described above. It is not that the only construction remaining to

1 terminate the fiber is simply to terminate fibers at one end at an
2 accessible terminal, as Covad would have the Commission believe.
3 Rather, Verizon would be required to perform additional splicing and
4 placement of new fiber cables to extend the fibers from one accessible
5 terminal to another.

6

7 **Q. COVAD CLAIMS THAT VERIZON WILL “SIMPLY LEAVE THE FIBER**
8 **UNTERMINATED UNTIL VERIZON WANTS TO USE THE FACILITY.”**
9 **COVAD PETITION ATTACH. B AT 16. WHAT IS YOUR REACTION?**

10 A. As the foregoing discussion demonstrates, Verizon does not construct
11 new fiber optic facilities to the point where the *only* remaining work item
12 required to make them available and attached end-to-end to Verizon’s
13 network is to terminate the fibers onto fiber distributing frame connections
14 at the customer premises. Verizon’s new fiber optic facilities are
15 constructed in stages, over a number of years. This involves major
16 construction activities such as: (1) obtaining easements, permits, and
17 right-of-way, (2) constructing pole lines, manholes, and conduit,
18 (3) placing multiple sections of new fiber cable, (4) burying fiber optic
19 cables, (5) splicing fiber optic cables together, and (6) placing terminating
20 equipment in central offices, huts, controlled environmental vaults, and
21 customer premises. It is *not* simply a matter of terminating the fibers on
22 terminating equipment at the customer premises.

23

24 In other words, Verizon does not fully construct fiber optic cable routes
25 between two terminal locations and simply leave fibers “dangling” near

1 the terminals. If fibers are not terminated to an accessible terminal, then
2 the entire cable is still under construction.

3

4 **Q. ARE “UNTERMINATED” FIBERS AS YOU DESCRIBE ABOVE PART**
5 **OF VERIZON’S ASSIGNABLE INVENTORY OF FIBER?**

6 A. No. Partially constructed fibers are not included in Verizon’s assignable
7 inventory of fiber. Therefore, they cannot be assigned to fill an ALEC
8 dark fiber order, nor can they be assigned to a new Verizon lit fiber optic
9 system.

10

11 **Q. ARE PARTIALLY CONSTRUCTED, “UNTERMINATED” FIBERS**
12 **UNES?**

13 A. No. Based on the foregoing, fibers that are not yet terminated at both
14 ends at an accessible terminal do not satisfy the FCC’s definition of dark
15 fiber. They are not “physically connected to facilities that the incumbent
16 LEC currently uses to provide service,” they cannot be used by ALECs or
17 Verizon “without installation” by Verizon, and they are not “easily called
18 into service.”

19

20 **ISSUE NOS. 43 and 45 — SPLICING VS. CROSS-CONNECTING FIBER**

21

22 **Q. WHAT IS THE DISPUTE REGARDING THESE ISSUES?**

23 A. In Issue No. 43, Covad claims that the Agreement should clarify that
24 Verizon’s obligation to provide UNE dark fiber includes the duty to provide
25 any and all of the fibers on any route requested by Covad regardless of

1 whether individual segments of fiber must be spliced or cross-connected
2 to provide continuity end to end. In Issue No. 45, Covad claims that
3 Verizon should indicate the availability of dark fiber between any two
4 points in a LATA without regard to the number of “dark fiber
5 arrangements that must be spliced or cross connected together for
6 Covad’s desired route.” Covad Petition Attach. B at 17.

7

8 These issues, as characterized by Covad, raise two distinct questions,
9 which must be addressed separately: (1) whether Verizon should be
10 required to splice fiber together to create new continuous routes for
11 Covad, and (2) whether Verizon will cross-connect two existing, fully
12 terminated dark fiber IOF strands for an ALEC at an intermediate central
13 office without requiring Covad to collocate at the intermediate central
14 office.

15

16 **Q. CAN YOU PLEASE DESCRIBE THE FIRST ISSUE REGARDING**
17 **SPLICING?**

18 **A.** Yes. With respect to the first issue, the fiber optic strand must be a
19 continuous (completed) uninterrupted path between two accessible
20 terminals. If Verizon must perform splicing work, the fiber is still under
21 construction and not available as a UNE.

22

23

24

25

1 Q. WHAT IS THE DIFFERENCE BETWEEN SPLICING TWO STRANDS
2 OF FIBER TOGETHER AND CROSS-CONNECTING THEM?

3 A. As explained above with respect to Issue No. 41, splicing is performed as
4 part of the construction of the network and involves welding the fibers
5 together. Cross-connecting fibers, on the other hand, involves placing an
6 optical cross-connect jumper between two already fully spliced and
7 *terminated* fiber optic strands. The cross-connect can be connected and
8 disconnected at the accessible terminal without disturbing the fibers or
9 opening a splice case.

10

11 Q. CAN YOU DESCRIBE THE SECOND ISSUE RAISED BY COVAD IN
12 ISSUE NOS. 43 AND 45 REGARDING CROSS-CONNECTS?

13 A. Yes. The second issue raised by Covad in Issue Nos. 43 and 45
14 concerns whether Verizon should combine two separate, terminated dark
15 fiber UNEs for Covad by cross-connecting them at a central office to
16 create a new fiber route — *i.e.*, whether Verizon will provide an indirect
17 fiber route running through intermediate offices. Under Verizon's original
18 proposal, Covad would have to order dark fiber on a route-direct basis
19 and combine the two separate, terminated strands at its collocation
20 arrangement. This is conceptually different from the question whether
21 fiber is "continuous" (*i.e.*, no splicing is required). Moreover, Verizon is
22 willing to cross-connect fibers at intermediate central offices for Covad,
23 although it will not splice fiber to create a new continuous route for
24 Covad.

25

1 In fact, Verizon has proposed new contract language for § 8.2.5 of the
2 Interconnection Agreement that would allow Covad to order dark fiber on
3 an indirect route basis, without having to collocate at intermediate central
4 offices. Verizon's proposed § 8.2.5 now states:

5
6 A "Dark Fiber Inquiry Form" must be submitted prior to submitting
7 an ASR. Upon receipt of Covad's completed Dark Fiber Inquiry
8 Form, Verizon will initiate a review of its cable records to determine
9 whether Dark Fiber Loop(s), Dark Fiber Sub-loop(s) or Dark Fiber
10 IOF may be available between the locations and in the quantities
11 specified. Verizon will respond within fifteen (15) business days
12 from receipt of the Covad Dark Fiber Inquiry Form, indicating
13 whether Dark Fiber Loop(s), Dark Fiber Sub-loop(s) or Dark Fiber
14 IOF may be available (if so available, an "Acknowledgement")
15 based on the records search except that for voluminous requests
16 or large, complex projects, Verizon reserves the right to negotiate
17 a different interval. The Dark Fiber Inquiry is a record search and
18 does not guarantee the availability of Dark Fiber Loop(s), Dark
19 Fiber Sub-loop(s) or Dark Fiber IOF. Where a direct Dark Fiber
20 IOF route is not available, Verizon will provide, where available,
21 Dark Fiber IOF via a reasonable indirect route that passes through
22 intermediate Verizon Central Offices at the rates set forth in the
23 Pricing Attachment. Verizon reserves the right to limit the number
24 of intermediate Verizon Central Offices on an indirect route
25 consistent with limitations in Verizon's network design and/or

1 prevailing industry practices for optical transmission applications.
2 Any limitations on the number of intermediate Verizon Central
3 Offices will be discussed with Covad. If access to Dark Fiber IOF
4 is not available, Verizon will notify Covad, within fifteen (15)
5 Business Days, that no spare Dark Fiber IOF is available over the
6 direct route nor any reasonable alternate indirect route, except that
7 for voluminous requests or large, complex projects, Verizon
8 reserves the right to negotiate a different interval. Where no
9 available route was found during the record review, Verizon will
10 identify the first blocked segment on each alternate indirect route
11 and which segment(s) in the alternate indirect route are available
12 prior to encountering a blockage on that route, at the rates set forth
13 in the Pricing Attachment.

14
15 If no direct dark fiber IOF route is available between the A and Z points
16 requested by Covad, Verizon will search for reasonable indirect routes
17 without requiring Covad to submit additional dark fiber inquiries. This
18 contract provision thus eliminates Covad's concerns expressed in Issue
19 No. 45. Reasonable limitations on this offering, however, are necessary.

20
21 **Q. WHAT LIMITATIONS DO YOU PROPOSE?**

22 A. Verizon's proposed contract language reserves Verizon's right to limit the
23 number of intermediate central offices on an indirect route consistent with
24 limitations in Verizon's network design and/or prevailing industry practices
25 for optical transmission applications. There are certain technical

1 limitations on the number of intermediate offices through which a fiber
2 route may go without collocation. For example, Verizon's past
3 experience with the deployment of fiber optic cables and electronics
4 indicates that optical repeaters generally are required when a fiber circuit
5 exceeds 20 miles. If repeaters and/or regenerators are required every 20
6 miles or so along a fiber cable to provision high-capacity services, it
7 follows that some type of ALEC access point (e.g., collocation facility) at a
8 location approximately 20 miles from the originating point of the
9 equipment (and at each subsequent 20 mile increment) will be required.

10

11 There may be other technical limitations that come into play. Verizon
12 does not have a specific network limitation or "prevailing industry
13 practice" in mind that necessarily would be used to determine that an
14 indirect route is unreasonable. This language is a protective measure in
15 the event that a limitation on the number of intermediate central offices
16 was necessary for reasons that Verizon has not yet encountered in
17 connection with dark fiber inquiries received in Florida, but could
18 encounter in the future as a result of an unforeseen or unanticipated
19 network or technical problem or implementation of a new industry
20 standard. For example, in the future, it is possible that, in Verizon's
21 largest central offices, fiber optic distributing frame congestion or fiber
22 optic tie cable congestion temporarily could preclude Verizon from
23 providing cross-connections between specific pairs of fiber optic cables.
24 The proposed language also is intended to provide Verizon with some
25 flexibility to make judgments on an individual case basis, for instance,

1 where a request for dark fiber would involve an inefficient use of scarce
2 fiber resources. An example of an inefficient use of scarce fiber
3 resources would be a request for a direct dark fiber circuit between two
4 wire centers that are 20 miles apart, but where the only theoretically
5 available indirect route between the two locations is 100 miles. Indeed, in
6 requiring Verizon Virginia to cross-connect fiber at intermediate offices for
7 an ALEC in the *Virginia Arbitration Order*, see *Petition of WorldCom, Inc.*
8 *Pursuant to Section 252(e)(5) of the Communications Act for Preemption*
9 *of the Jurisdiction of the Virginia State Corporation Commission*
10 *Regarding Interconnection Disputes with Verizon Virginia Inc., and for*
11 *Expedited Arbitration*, Memorandum Opinion and Order, CC Docket Nos.
12 00-218, *et al.*, DA 02-1731 (Wireline Comp. Bur. rel. July 17, 2002), the
13 FCC's Wireline Competition Bureau did not indicate that Verizon must
14 provide fiber along indirect routes through an unlimited number of
15 intermediate offices, especially when it would result in inefficient use of
16 scarce fiber cable resources or would require the use of optical repeaters
17 to carry light end-to-end (which necessarily requires collocation by the
18 ALEC at an intermediate office along the route).

19
20 In actual practice, however, Verizon anticipates placing few, if any,
21 limitations on indirect fiber routes. If Verizon does place such a limitation,
22 Verizon will discuss this limitation with Covad in order to permit Covad to
23 make any necessary collocation decisions. If Covad disagrees with the
24 limitation applied, it may invoke the dispute resolution provisions of the
25 Interconnection Agreement to resolve the disagreement.

1 **ISSUE NOS. 46 and 47 — DARK FIBER INFORMATION**

2

3 **Q. WHAT IS THE DISPUTE REGARDING ISSUE NO. 46?**

4 A. In its proposed § 8.2.5.1, Covad demands that Verizon provide “maps of
5 routes that contain available Dark Fiber IOF by LATA for the cost of
6 reproduction.” Covad Petition Attach. C at 24. Verizon, however, does
7 not maintain such “maps” for its own use, and thus cannot provide such
8 nonexistent “maps” for the cost of “reproduction” (there is nothing to
9 “reproduce”).

10

11 **Q. WHAT IS THE DISPUTE REGARDING ISSUE NO. 47?**

12 A. Covad, in its proposed § 8.2.8.1, has attempted to specify the type of
13 information that Verizon must provide in response to a field survey
14 request. Specifically, Covad’s proposed § 8.2.8.1 provides that
15 “Responses to field survey requests shall indicate whether: (1) the fiber is
16 of a dual-window construction with the ability to transmit light at both 1310
17 nm and 1550 nm; (2) the numerical aperture of each fiber shall be at least
18 0.12; and (3) the maximum attenuation of each fiber is either 0.35 dB/km
19 at 1310 nanometers (nm) and 0.25dB/km at 1550 nm.” Covad Petition
20 Attach. C at 24. This is not the kind of operational activity that should be
21 defined in a variety of different ways on an interconnection-agreement-by-
22 interconnection-agreement basis, but should be consistent for all ALECs.

23

24

25

1 Q. WITH RESPECT TO ISSUE NO. 46, DOES VERIZON HAVE THE
2 ABILITY TO PROVIDE THE TYPE OF INFORMATION THAT COVAD IS
3 REQUESTING?

4 A. No. The availability of dark fiber at specific locations changes on a day-
5 to-day basis depending on the needs of Verizon, ALECs, interexchange
6 carriers, and other customers for lit fiber services, as well as ongoing
7 construction activities. Verizon must review its records on a route-by-
8 route basis to determine the availability of dark fiber. Therefore, Verizon
9 cannot generate a snapshot picture of all available dark fiber in Florida at
10 any given time. Instead, the most Verizon could do is create a map
11 showing the dark fiber available at the time each line on the map was
12 drawn. Such a map would become outdated during the process of
13 creating it, and Covad could not assume that dark fiber shown as
14 available on the map would be available when (and if) Covad later
15 decides to place an order. Therefore, requiring Verizon to create blanket
16 information to give to Covad identifying all available dark fiber in Florida
17 would not only be unduly burdensome and extremely costly for Verizon,
18 but the information would be useless to Covad even before it was
19 received.

20
21 Like dark fiber, there is limited availability of other types of High Speed
22 IOF and loop UNEs (e.g., DS3s, OC3s, and OC12s, which are analogous
23 to Dark Fiber in many respects). And, like dark fiber, there is no blanket
24 statewide list of all locations where such UNEs are available. In both

1 cases, publishing such a list makes no sense from a practical
2 perspective.

3

4 **Q. WHAT INFORMATION DOES VERIZON PROVIDE TO ALECS ABOUT**
5 **DARK FIBER?**

6 A. Verizon provides fiber information to ALECs in three different ways —
7 dark fiber inquiries, wire center fiber maps, and field surveys. This variety
8 of information satisfies ALEC needs for general network planning
9 information; availability checks for specific spans/routes/locations; and
10 the detailed engineering optical transmission design for the ALEC's fiber
11 optic electronics. Wire center fiber maps provide street level information
12 on Verizon's fiber routes within a wire center so that ALECs can
13 determine the location of fiber routes in Verizon's network and, thus,
14 where dark fiber might potentially be available. Dark fiber inquiries and
15 field surveys, on the other hand, provide specific dark fiber availability
16 between particular A and Z points on the maps at a given point in time. If
17 an ALEC orders a field survey, Verizon will dispatch technicians to the
18 specific location requested to verify the availability of dark fiber pairs and
19 test the fiber's transmission capabilities. Although Verizon does not
20 require field surveys before submitting an ASR for the fiber, such surveys
21 are recommended, because Verizon cannot guarantee that fiber is
22 available from inventory records alone. Using these three options, an
23 ALEC is provided with street level information on the fiber routes within a
24 wire center area and specific dark fiber availability between the A and Z
25 points. The dark fiber inquiry is provided for a fixed price and is the

1 required first step in ordering a dark fiber circuit. The field surveys and
2 wire center fiber maps, on the other hand, are optional engineering
3 services available on request for time and materials. These three
4 methods combined are more than sufficient to permit Covad to determine
5 dark fiber availability and mirror the process that Verizon uses to
6 determine fiber availability for its own lit fiber services. Each of these
7 three methods is outlined in revised contract language that Verizon has
8 proposed to Covad.

9
10 Verizon proposes to eliminate § 8.2.8 of the UNE Attachment and insert a
11 new § 8.2.20, which states:

12
13 § 8.2.20 Covad may request the following, which shall be
14 provided on a time and materials basis (as set forth
15 in the Pricing Attachment):

16 § 8.2.20.1 A fiber layout map that shows the streets within a
17 Verizon Wire Center where there are existing
18 Verizon fiber cable sheaths. Verizon shall
19 provide such maps to Covad subject to the
20 agreement of Covad, in writing, to treat the maps
21 as confidential and to use them for preliminary
22 design purposes only. Covad acknowledges that
23 fiber layout maps do not show whether or not
24 spare Dark Fiber Loops, Dark Fiber Sub-Loops,
25 or Dark Fiber IOF are available. Verizon shall

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provide fiber layout maps to Covad subject to a negotiated interval.

8.2.20.2

A field survey that shows the availability of Dark Fiber Loop(s), Dark Fiber Sub-Loop(s) or Dark Fiber IOF between two or more Verizon Central Offices, a Verizon Central Office and a Covad Central Office or a Verizon End Office and the premises of a Customer, shows whether or not such Dark Fiber Loop(s), Dark Fiber Sub-Loop(s), or Dark Fiber IOF are defective, shows whether or not such Dark Fiber Loop(s), Dark Fiber Sub-Loop(s) or Dark Fiber IOF have been used by Verizon for emergency restoration activity and tests the transmission characteristics of Verizon's Dark Fiber Loop(s), Dark Fiber Sub-Loop(s) or Dark Fiber IOF. If a field survey shows that a Dark Fiber Loop, Dark Fiber Sub-Loop or Dark Fiber IOF is available, Covad may reserve the Dark Fiber Loop, Dark Fiber Sub-Loop or Dark Fiber IOF, as applicable, for ten (10) Business Days from receipt of Verizon's field survey results. If Covad submits an order for access to such Dark Fiber Loop, Dark Fiber Sub-Loop or Dark Fiber IOF after passage of the foregoing ten (10) Business Day reservation period, Verizon

1 does not guarantee or warrant the Dark Fiber
2 Loop, Dark Fiber Sub-Loop or Dark Fiber IOF will
3 be available when Verizon receives such order,
4 and Covad assumes all risk that the Dark Fiber
5 Loop, Dark Fiber Sub-Loop or Dark Fiber IOF will
6 not be available. Verizon shall perform a field
7 survey subject to a negotiated interval. If a
8 Covad submits an order for a Dark Fiber Loop,
9 Dark Fiber Sub-Loop or Dark Fiber IOF without
10 first obtaining the results of a field survey of such
11 Dark Fiber Loop, Dark Fiber Sub-Loop or Dark
12 Fiber IOF, Covad assumes all risk that the Dark
13 Fiber Loop, Dark Fiber Sub-Loop or Dark Fiber
14 IOF will not be compatible with Covad's
15 equipment, including, but not limited to, order
16 cancellation charges.

17
18 **ISSUE NO. 48 — LIMITING FIBERS LEASED ON A SINGLE ROUTE**

19
20 **Q. WITH RESPECT TO ISSUE NO. 48, WHAT IS VERIZON'S CONTRACT**
21 **PROPOSAL?**

22 **A.** Dark fiber is a scarce resource in Verizon's network. Therefore, Verizon
23 has proposed contract language that would limit Covad to 25% of the
24 available fiber, within any given segment of Verizon's network. This limit
25 is a reasonable anti-warehousing provision that prevents one competitor

1 from occupying all available fiber in a particular area and excluding entry
2 by other carriers. This 25% limitation does not impose any practical
3 impediment to Covad's ability to provide service to its customers. Fiber
4 has huge bandwidth (provided, of course, that it has not been rendered
5 unusable by excessive splicing or has too much loss or other
6 degradation). Therefore, limiting Covad to 25% of available fiber on any
7 given segment of Verizon's network does not present a practical limit on
8 the range of services that Covad can offer to its customers.

9
10 In fact, such a limit would encourage Covad and other ALECs to utilize
11 fiber more efficiently so as to maximize the resources available for all
12 telecommunications companies in Florida. Verizon's contract language is
13 patterned after the 25% cap on available dark fiber approved by the
14 Texas Public Utility Commission ("Texas PUC") in 1996. *See Petition of*
15 *AT&T Communications of the Southwest, Inc. for Compulsory Arbitration*
16 *to Establish an Interconnection Agreement Between AT&T And GTE*
17 *Southwest, Inc. and Contel of Texas, Inc. – Arbitration Award*, Docket No.
18 16355, at 32-33 (Tex. PUC Dec. 13, 1996). It is our understanding that
19 the FCC, in ¶ 354 of the *UNE Remand Order*, expressly approved of the
20 25% limitation established by the Texas PUC. *Implementation of the*
21 *Local Competition Provisions of the Telecommunications Act of 1996*,
22 *Third Report and Order and Fourth Further Notice of Proposed*
23 *Rulemaking*, 15 FCC Rcd 3696 (1999) ("*UNE Remand Order*"), *petitions*
24 *for review granted, United States Telecom Ass'n v. FCC*, 290 F.3d 415

1 (D.C. Cir. 2002), *petition for cert. pending, WorldCom, Inc. v. United*
2 *States Telecom Ass'n*, No. 02-858 (U.S. filed Dec. 3, 2002).

3

4 **Q. COVAD CLAIMS THAT IT IS “CONCERNED WITH ITS ABILITY TO**
5 **VERIFY THE ACCURACY OF VERIZON’S REPORTING AND METHOD**
6 **OF CALCULATION WITH RESPECT TO A 25% LIMIT ON DARK**
7 **FIBER.” COVAD PETITION ATTACH. B AT 18-19. WHAT IS YOUR**
8 **REACTION?**

9 A. We do not understand Covad’s concerns about the calculation of the 25%
10 limit. The calculation of the 25% cap is easy and straightforward. If a
11 fiber route consists of a 24-strand cable, Covad may lease up to 6 fibers
12 on that route ($24 \times 0.25 = 6$). Similarly, if a fiber route consists of a 144-
13 strand cable, Covad may lease up to 36 fiber strands on the route ($144 \times$
14 $0.25 = 36$). Up to these limits, fiber is available on a first-come, first-
15 served basis. Clearly, even in smaller cables, the 25% cap poses no
16 threat to Covad’s ability to provide service to its customers. Although
17 Verizon cannot verify that an ALEC has ever asked to lease more than
18 25% of the total fiber in a cable as dark fiber without extensive research,
19 we personally know of no examples where this has occurred.

20

21 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

22 A. Yes, it does.

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