

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C.

RECEIVED

MAY 26 1999

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In The Matter Of)
Implementation of the Local Competition)
Provisions in the Telecommunications Act)
of 1996)
Interconnection Between Local Exchange)
Carriers and Commercial Mobile Radio)
Service Providers)

CC Docket No. 96-98

CC Docket No. 95-185

COMMENTS OF NEW ENGLAND VOICE & DATA, LLC

Scott Sawyer
Vice President, Regulatory
New England Voice & Data, LLC
222 Richmond Street
Suite 206
Providence, RI 02903
(401) 274-6383

WILLKIE FARR & GALLAGHER
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20036
(202) 328-8000

No. of Copies rec'd
List ABCDE

042

ATTORNEYS FOR
NEW ENGLAND VOICE AND DATA, LLC

May 26, 1999

Table of Contents

	Page
I. INTRODUCTION	2
II. DARK FIBER IS USED IN THE PROVISION OF TELECOMMUNICATIONS SERVICE	4
III. IT IS “TECHNICALLY FEASIBLE” FOR ILECS TO PROVIDE UNBUNDLED DARK FIBER TO CLECS	6
IV. DARK FIBER SATISFIES THE STANDARDS OF SECTION 251(d)(2).	7
A. DARK FIBER IS NOT A PROPRIETARY NETWORK ELEMENT	7
B. THE FAILURE TO PROVIDE UNBUNDLED ACCESS TO DARK FIBER WOULD IMPAIR THE ABILITY OF TELECOMMUNICATIONS CARRIERS TO PROVIDE COMPETITIVE SERVICES.	8
C. THERE ARE NO SUBSTITUTES FOR DARK FIBER LOOPS.	10
D. THERE ARE NO SUBSTITUTES FOR DARK FIBER INTEROFFICE TRANSPORT	11
1. Bell Atlantic Lit Transport Is Not A Reasonable Substitute For Dark Fiber.	11
2. Procuring Dark Fiber From Non-ILEC Sources Is Not A Reasonable Substitute for Unbundled Dark Fiber.	13
3. Installing Fiber Through Self-Provisioning Is Not A Reasonable Substitute For Unbundled Dark Fiber.	14
VI. CONCLUSION.....	15

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C.

_____)	
In The Matter Of)	
Implementation of the Local Competition)	
Provisions in the Telecommunications Act)	CC Docket No. 96-98
of 1996)	
)	
Interconnection Between Local Exchange)	
Carriers and Commercial Mobile Radio)	CC Docket No. 95-185
Service Providers)	
_____)	

COMMENTS OF NEW ENGLAND VOICE & DATA, LLC

New England Voice & Data, LLC ("NEVD" or the "Company"), through its attorneys, hereby files these Comments in response to the Commission's Second Further Notice of Proposed Rulemaking in the above-captioned dockets. NEVD is offering, or plans to offer in the near future, voice and data services in the Bell Atlantic ("BA") North (former NYNEX) region. As a relatively recent start-up company, NEVD does not typically involve itself in FCC proceedings, not out of a lack of interest, but rather out of a lack of resources. Nevertheless, because of the critical importance of the availability of dark fiber as an unbundled network element ("UNE") to NEVD's business plan, NEVD is submitting their comments urging the Commission to add dark fiber to the minimum list of network elements that ILECs must provide under the Act.

I. INTRODUCTION

In the Local Competition Order, the Commission declined to address the unbundling of ILEC dark fiber because it lacked a sufficient record.¹ However, the Commission committed to reviewing the matter and revising its rules as necessary.² NEVD provides herein the information sufficient for the Commission to determine that ILEC dark fiber should be made available as an unbundled network element.

Currently, NEVD has access to dark fiber as a UNE at interim TELRIC prices in Massachusetts, New Hampshire and Rhode Island. NEVD is actively using such access to unbundled dark fiber to install SONET architecture in those states that will enable NEVD to serve customers in small cities and surrounding suburban areas. To accomplish this, NEVD is purchasing and installing switches, aggressively collocating in a large number of BA central offices, connecting such central offices by leasing unbundled dark fiber and energizing such unbundled dark fiber with NEVD electronics.

By allowing such unbundled access to BA's unused dark fiber under reasonable terms and conditions, including TELRIC pricing, state commissions have lowered the entry barriers to facilities-based entry, especially those associated with entry in smaller sized cities and surrounding suburban areas that have not yet seen the benefits of competition. If unbundled dark fiber were not available to NEVD, it would not be economically feasible to provide switched local exchange service in most of these areas.

¹ Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Docket Nos. 96-98 and 95-185, *First Report and Order*, 11 FCC Rcd 15499 at ¶ 450 (1996) ("Local Competition Order").

² Id.

A number of states outside the BA North region have also ruled that dark fiber is a UNE.³ Unfortunately, ILECs, including BA, are seeking to overturn state decisions. For example, BA has appealed the New Hampshire PUC's ruling, has threatened to appeal the Massachusetts decision, and does not appear to recognize a Rhode Island Arbitration Order affirming an arbitrator's finding that dark fiber is a UNE (even though BA never contested to the arbitrator's finding at the PUC hearing). As a result, there is uncertainty

³ *Petition of MCI for Arbitration Under the Telecommunications Act of 1996*, Docket No. 6865-U (GA PSC, Dec. 17, 1996); *MCI Telecommunications Corporation: Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Central Telephone Company of Illinois*, 96-AB-009 (Illinois CC, Feb. 5, 1997); *MCI Telecommunications Corp. v. BellSouth Telecommunications, Inc.*, No. Civ.A. 97-76, 1999 WL 166183 (E.D. Ky., March 11, 1999); *Consolidated Petitions of New England Telephone and Telegraph d/b/a Bell Atlantic-Massachusetts et al.*, DPU/DTE 96-73/74, 96-75, 96-80/81, 96-83, 96-94-Phase 4-J (Mass. DPU/DTE, March 19, 1999); *Consolidated Petitions of AT&T Communications of the Midwest, Inc.; MCImetro Access Transmission Services, Inc.; and MFS Communications Company for Arbitration with U S WEST Communications, Inc. Pursuant to Section 252(b) of the Federal Telecommunications Act of 1996*, Docket No. P-422, 421/M-96-885 (Minn. PUC March 17, 1997); *AT&T Communications of the Southwest, Inc.'s Petition for Arbitration Pursuant to Sec. 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Southwestern Bell Telephone Company*, Case No. TO-97-40 (MO PSC, Dec. 11, 1996); *Petition of MCI Telecommunications Corporation for Arbitration Pursuant to Sec. 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with Ohio Bell Telephone Company d/b/a Ameritech Ohio*, Case No. 96-888-TP-ARB (OH PUC, Feb. 20, 1997); *Petition of AT&T for Arbitration under the Telecommunications Act of 1996*, Docket No. 96-01152 (TN RA, Jan. 23, 1997); *Petition of Waller Creek Communications, Inc. for Arbitration with Southwestern Bell Telephone Company*, Docket No. 17922 (TX PUC, Dec. 29, 1997); *Petition of Electric Lightwave for Arbitration Pursuant to Sec. 252(h) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with GTE Northwest Inc.*, Docket No. UT-901029 (WA UTC, March 13, 1992); *In Re: Bell Atlantic*, DE 97-229, Order No. 22,990 (NH PUC, July 24, 1998); *Petition for Arbitration of an Interconnection Agreement Filed by MCI Telecommunications Corporation*, Docket No. 2467, Order No. 15201 (RI PUC, Jan. 24, 1997).

as to whether dark fiber will continue to be offered as a UNE as ordered by state commissions. Obviously, uncertainty makes it difficult for CLECs to plan their networks and ultimately to provide service to end users. By including dark fiber on the list of minimum unbundled network elements that ILECs must offer nationally, the FCC could provide certainty to CLECs and avoid unnecessary litigation that strains the resources of both CLECs and state commissions. Moreover, there is no evidence that the current availability of loop and interoffice transport dark fiber is nearly sufficient to warrant even a preliminary discussion of eventually removing dark fiber from the minimum national list of UNEs⁴.

II. DARK FIBER IS USED IN THE PROVISION OF TELECOMMUNICATIONS SERVICE

The Communications Act defines the term "network element" as follows:

A facility or equipment used in the provision of a telecommunications service. Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, data bases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service.⁵

Noting the breadth of this definition, the Supreme Court in *AT&T v. Iowa Utilities Board* upheld the Commission's broad construction of the statutory definition of network element. In so doing, the Court rejected ILEC arguments that a "network element" must

⁴ These comments assume that the FCC will adopt such a minimum national list on a going-forward basis as it did initially in the Local Competition Order. All of the policy justifications for adopting such a minimum national list remain fully relevant and valid. See Local Competition Order, ¶¶ 241-242.

⁵ 47 U.S.C. § 153(29).

be part of the physical facilities and equipment used to provide local telephone service.⁶ As set forth in the Affidavit of David A. Graham, dark fiber is a *physical facility*--fiber optic cable--that is customarily *used* by telecommunications carriers for the purpose of providing telecommunications service.⁷ Thus, dark fiber meets even ILEC definitions of a network element.⁸

In some state proceedings, however, BA has advocated a narrow interpretation of the term “unbundled element” by imposing a temporal limitation on the word “used.” BA has contended that dark fiber is not a network element because it is not presently energized or “lit” and, therefore, not “currently used” to provide telecommunications service.

This argument relies on an empty formalism and is easily rejected. As stated above, dark fiber is customarily used by telecommunications carriers for the purpose of providing telecommunications service. Its sole purpose is telecommunications.⁹ Furthermore, the BA argument proves too much. It would exclude from the definition of “UNE” several other parts of the ILEC network that are firmly recognized as within the statutory definition. Thus, as pointed out by the New Hampshire Public Utilities Commission, the fact that dark fiber is not “currently used” does not distinguish it from UNEs that have spare capacity:

⁶ AT&T Corp. v. Iowa Utils. Bd., 119 S.Ct. 721, ___, 142 L.E.2d. 834, 854 (1999).

⁷ Graham Affidavit at ¶ 6.

⁸ There can also be no question that dark fiber meets the requirements of Section 251(c)(3) since it is unquestionably used to provide a telecommunications service by NEVD. See 47 U.S.C. § 251(c)(3).

⁹ Graham Affidavit at ¶ 6.

The fact that dark fiber is not currently used in the provision of service to customers for a fee does not distinguish itself from other network elements. Most parts of a network are designed to have spare capacity, and fiber is no exception. We presume that is why Bell Atlantic's accounting records report, as used and useful, all fiber sheath which has even one lit strand.¹⁰

Dark fiber has been deployed in BA's network for use in providing telecommunications service. Further, in some cases, dark fiber is actually wrapped around "lit fiber" that is classified as a UNE. There can be no question, therefore, that it meets the definition of UNE.

III. IT IS "TECHNICALLY FEASIBLE" FOR ILECS TO PROVIDE UNBUNDLED DARK FIBER TO CLECS

Under the terms of its interconnection agreements with BA, pertinent copies of which are included as exhibits to the attached Affidavit of David A. Graham, unbundled dark fiber is offered to NEVD, subject to availability, for the purpose of using such fiber as a transmission medium for the provision of telecommunications services. Unbundled dark fiber is accessed from NEVD's collocation arrangements at existing BA hard termination points (e.g., fiber distribution frames, industry standard mechanical fiber connectors) or at existing slice points.

To order dark fiber, NEVD submits a written request designating the two locations between which unbundled dark fiber is desired and the number of dark fiber pairs requested. BA currently provides unbundled dark fiber in the following locations: between two NEVD collocation arrangements; between an NEVD collocation arrangement and end users' premises; and between an NEVD collocation arrangement and

¹⁰ *In Re: Bell Atlantic*, DE 97-229, Order No. 22,990 at 6 (NHPUC, July 24, 1999).

an existing BA splice point. Accordingly, it is “technically feasible” for ILECs to provide unbundled dark fiber at these points in a network.

IV. DARK FIBER SATISFIES THE STANDARDS OF SECTION 251(d)(2).

Dark fiber is clearly not a proprietary UNE. Furthermore, failure to provide dark fiber used in the "loop" distribution plant as well as in interoffice transport on an unbundled basis would unquestionably impair CLECs' ability to provide telecommunications services. Thus, under Section 251(d)(2), both loop and interoffice transport dark fiber must be made available as a UNE.

A. DARK FIBER IS NOT A PROPRIETARY NETWORK ELEMENT.

Section 251(d)(2) provides that, in determining which network elements should be unbundled under section 251(c)(3), the Commission shall consider:

At a minimum, whether (A) access to such network elements as are proprietary in nature is necessary; (B) the failure to provide access to such network element would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.¹¹

Under the Act, it is clear that the “necessary” standard may not be considered for network elements that are not proprietary.

There is no evidence that dark fiber is a proprietary network element. NEVD does not believe that BA has asserted the contrary in the course of proceedings in the BA-North service area. Dark fiber carries with it no proprietary protocols, nor does it contain or involve proprietary information. Further, fiber optic cable is a commodity that can be

¹¹ 47 U.S.C. § 251(d)(2).

purchased from a number of manufacturers. Since dark fiber is not proprietary, the “necessary” standard does not apply.

B. THE FAILURE TO PROVIDE UNBUNDLED ACCESS TO DARK FIBER WOULD IMPAIR THE ABILITY OF TELECOMMUNICATIONS CARRIERS TO PROVIDE COMPETITIVE SERVICES.

Before ILECs can be required to unbundle network elements, the FCC must consider whether “the failure to provide access to network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.”¹² In considering this, the Supreme Court stated that the Commission must apply “some limiting standard, rationally related to the goals of the Act.”¹³ The Court also found that the FCC must consider “the availability of elements outside the incumbent’s network.”¹⁴

The import of the Supreme Court’s decision is that the Commission may not conclude that the mere presence of *any* difference between the use of a network element and the use of a substitute functionality satisfies the “impair” test. NEVD suggests that the Commission should inquire whether any such difference between the network element and the substitute *materially* reduces a CLEC’s ability to provide the services it wants to offer. Accordingly, if a CLEC could fully internalize the added burden imposed by such a difference so that its ability to provide the service remains unaffected, then the failure to provide the network element would not result in impairment. By contrast, if a

¹² 47 U.S.C. § 251(d)(2)(B).

¹³ AT&T Corp. v. Iowa Utils. Bd., 142 L.Ed.2d. at 855.

¹⁴ Id.

CLEC's ability to provide the proposed service would be materially affected if it were required to use a proposed substitute, such CLEC would be impaired.

NEVD anticipates that ILECs such as BA may assert that the Supreme Court's decision means that elements that are available from other sources do not have to be provided as unbundled elements under the Act. This is wrong. For example, the theoretical availability of substitutes does not demonstrate that the inability to obtain dark fiber would not impair NEVD's ability to provide telecommunications services. Simply put, if a theoretical substitute results in a material increase in a CLEC's cost, it is not a reasonable substitute. Similarly, if a theoretical substitute results in a material decrease in a CLEC's quality of service, it is not a reasonable substitute. Further, if a theoretical substitute results in a material delay in providing service, it is not a reasonable substitute.

Notwithstanding the availability of theoretical alternatives, the availability of unbundled dark fiber is imperative to sustainable local competition. As set forth in the Affidavit of David A. Graham, the availability of unbundled dark fiber makes it efficient for market entrants, such as NEVD, to install SONET ring architecture in areas that are currently subject to little or no competitive entry. Access to unbundled dark fiber transport has made it economically feasible for NEVD to extend its networks beyond densely populated metropolitan areas and into suburban areas. Without such access, NEVD would experience such substantial increased costs, delay and degradation of service quality that NEVD would likely be forced to discontinue or substantially scale back its plans to serve customers in such areas.

C. THERE ARE NO SUBSTITUTES FOR DARK FIBER LOOPS.

Recently, BA has been deploying fiber in the local loop to serve large, multi-tenant buildings. There are no substitutes for such unbundled dark fiber loops. Just like conventional 2-wire and 4-wire copper loops, fiber optic loops are bottleneck facilities that tend to hold the end user hostage to the ILEC until and unless they are unbundled as a UNE.¹⁵ If CLECs such as NEVD are required to build out loops to reach end user customers, there will be no widespread competition, especially for residential customers.

If unbundled dark fiber loops were not available to NEVD, the Company's ability to offer state-of-the-art products and services such as Rate Adaptive Digital Subscriber Line ("RADSL") (High Speed Bandwidth to the premise) would be limited to a physical distance of approximately 2 miles (\pm 12,000) of non-loaded copper from the central office.¹⁶ Access to unbundled dark fiber in feeder/distribution network allows NEVD to extend the service offering to subscribers throughout the exchange by placing NEVD equipment at the end of the fiber lead, thereby maximizing customer coverage while minimizing the length of the copper extension and meeting the 2 mile threshold.¹⁷ Accordingly, making unbundled dark fiber available on a national basis will promote the development of advanced telecommunications services.

¹⁵ Graham Affidavit at ¶ 13.

¹⁶ Id. at ¶ 24.

¹⁷ Id. at ¶ 25.

D. THERE ARE NO SUBSTITUTES FOR DARK FIBER INTEROFFICE TRANSPORT.

Theoretically, there are substitutes for unbundled dark fiber as an interoffice transport medium. First, NEVD could purchase lit interoffice transport from BA at the rates established in its interconnection agreements or in cost proceedings. Second, NEVD could purchase dark fiber directly from a vendor and install it as needed. Third, NEVD could lease or procure fiber from a non-ILEC source. For the reasons discussed below, none of these “theoretical substitutes” is a “reasonable substitute” for unbundled dark fiber.

1. Bell Atlantic Lit Transport Is Not A Reasonable Substitute For Dark Fiber.

As explained in the Affidavit of David A. Graham, if NEVD is required to purchase lit transport in the place of unbundled dark fiber, it will result in a prohibitive (and unquestionably "material") increase in cost. For example, if NEVD is required to use OC-48 lit transport from BA instead of the unbundled dark fiber that it is now procuring to provide OC-48 service in some states, the recurring costs to NEVD for completing its SONET ring network in Massachusetts will be increased approximately 8-fold.¹⁸ It would be a vast understatement to say that NEVD’s ability to provide service would be materially impaired by an increase in cost of this magnitude. A similar magnitude of increased expense would apply with respect to the installation of NEVD’s networks in Rhode Island and New Hampshire.

¹⁸ Id. at ¶ 28.

An additional limitation on BA’s lit OC-48 transport is that it is offered on a point-to-point basis only. This limitation further increases NEVD’s costs and results in a material decrease in the reliability of NEVD’s network because it requires the introduction of 3 multiplexers (“MUXs”) at each cage location instead of the single MUX that is currently required using unbundled dark fiber.¹⁹ Specifically, establishing ring topography using BA lit fiber would require the provision of a terminating MUX to deliver the incoming link to NEVD and the provision of a second MUX to accept the outgoing link from NEVD for transport to the next node. In this configuration, a NEVD MUX must be placed between the two BA MUXs for interconnection to complete the hand off at each node. Using the NEVD 15-node ring in Massachusetts as an example, *BA would install a total of 30 unnecessary MUXs and introduce 30 additional points of potential failure in the NEVD network that would not exist in a ring built with dark fiber on the same route.*²⁰ Further, the cost of the additional 30 multiplexers must be borne by NEVD at the rates charged by BA for providing the link in the lit fiber configuration.²¹

Moreover, if NEVD were required to lease BA’s lit OC-48 transport in place of unbundled dark fiber, NEVD’s control and management of its interconnect links would become totally dependent upon BA for the identification, diagnosis and repair of the fiber and multiplex equipment to ensure NEVD’s point-to-point integrity.²² In contrast, with a dark fiber configuration, NEVD purchases and installs *its own* multiplexers to complete

¹⁹ Id. at ¶ 29.

²⁰ Id. at ¶ 30.

²¹ Id.

²² Id. at ¶ 31.

its SONET ring network. Importantly, this network design provides NEVD with complete control of its network for provisioning, surveillance and repair. It also provides NEVD with a network that is redundant and transparent for its customers.²³

Accordingly, if NEVD was required to use BA lit transport instead of dark fiber, it will result in a material decrease in NEVD's service quality.

2. Procuring Fiber From Non-ILEC Sources Is Not A Reasonable Substitute for Unbundled Dark Fiber.

As a competitive firm, NEVD obviously has a strong incentive to procure dark or lit fiber at the lowest cost and the most favorable terms and conditions that are available. Accordingly, prior to undertaking the installation of its networks, NEVD has actively sought out alternative sources for obtaining fiber.

A theoretical alternative to obtaining dark fiber from BA is attempting to procure it from non-ILEC local service providers. Such non-ILEC sources for fiber such as Neon, NEES, C2C, or other CLECs do exist in the northeast but at this time, they do not offer a readily available, reasonable substitute for unbundled dark fiber.

A major obstacle to relying on third party vendors is that they simply do not offer fiber on a ubiquitous basis. As explained in paragraph 36 of the Affidavit of David A. Graham, NEVD's experience is that at this stage in the market, such non-ILEC vendors do not have fiber available in the locations where NEVD needs it. For example, third party vendors were present in only 2 of the 15 BA central offices in Massachusetts where NEVD intends to collocate.²⁴ An additional problem with relying on CLECs is that, as

²³ Id. at ¶ 32.

²⁴ Id. at ¶ 36.

with BA, they generally offer lit transport only on a point-to-point basis. Accordingly, the same limitations pertaining to service quality that apply BA's lit OC-48 offering apply to fiber procured from third party vendors.²⁵ In sum, NEVD would be materially impaired if it were forced to rely on non-ILEC vendors of fiber.

3. Installing Fiber Through Self-Provisioning Is Not A Reasonable Substitute For Unbundled Dark Fiber.

With respect to self-provisioning, NEVD can and does procure and install dark fiber for its network. However, the process is time-consuming and substantially more expensive than the alternatives. Obtaining permits, performing excavation work, and securing necessary access to rights-of-way, pole attachments, and conduit space is a very time-consuming process. For example, it took NEVD six months just to gain access to conduit space in order to be able to pull cable 11,000 feet from BA's switch to NEVD's switch in Worcester, Massachusetts.²⁶ As stated above, NEVD intends to roll out SONET ring networks in three states later this summer, relying on unbundled dark fiber for transmission. If NEVD were required to install its own fiber in constructing such networks, NEVD's planned entry in Massachusetts, New Hampshire and Rhode Island would be materially delayed and its networks materially downsized.²⁷

NEVD further estimates the cost per mile of installing its own fiber in BA conduit to be approximately \$46,680. If NEVD were required to install its own fiber in BA conduit to complete its SONET ring networks in the state of Massachusetts it would cost

²⁵ Id. at ¶ 38.

²⁶ Id.

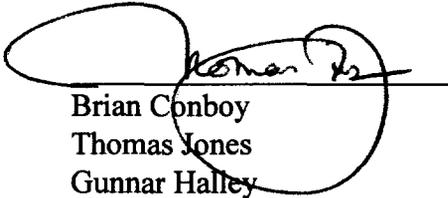
²⁷ Id. at ¶ 43.

NEVD approximately \$17 million just for the interoffice transport component required to complete such a network. These huge sunk costs represent a substantial entry barrier that is significantly lowered where dark fiber is available as a UNE. Accordingly, if NEVD were required to install its own fiber to complete its SONET ring network in the state of Massachusetts, as well as in other states, its costs would be prohibitively increased.

VI. CONCLUSION

For the above reasons, NEVD respectfully requests that this Commission include dark fiber to the list of unbundled network elements that ILECs must provide on a national basis.

Respectfully submitted,



Brian Conboy
Thomas Jones
Gunnar Halley

Scott Sawyer
Vice President, Regulatory
New England Voice & Data, LLC
222 Richmond Street
Suite 206
Providence, RI 02903
(401) 274-6383

WILLKIE FARR & GALLAGHER
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20036
(202) 328-8000

ATTORNEYS FOR
NEW ENGLAND VOICE AND DATA, LLC

May 26, 1999

**AFFIDAVIT OF DAVID A. GRAHAM
ON BEHALF OF
NEW ENGLAND VOICE & DATA, LLC**

David A. Graham, being duly sworn, deposes and states as follows:

I. INTRODUCTION

1. My name is David A. Graham. I am the Vice President of Network Implementation for New England Voice & Data, LLC ("NEVD" or the "Company").
2. As Senior Vice President of Network Implementation, my primary responsibilities are the design, engineering, installation and turn-up of the Company's outside network, including transport, collocation, and delivery of services.
3. I have over 31 years of experience in the design, planning, engineering, installation, surveillance and restoration of telecommunications networks. I began my career as an employee of New England Telephone Company in 1968 in its New Hampshire Outside Plant Engineering Department and held numerous technical and engineering management positions with New England Telephone, NYNEX and NYNEX Corporate prior to my retirement in April 1997. My more significant responsibilities while employed by NYNEX were the management and administration of a \$50 million annual capital construction program for expansion and modernization of NYNEX's telecommunications infrastructure for the state of Rhode Island. This responsibility included not only the identification, funding and scheduling, but also the engineering and construction of cable, loop electronics, poles, frame, conduit and surveillance equipment to ensure overall service continuity in a cost effective manner. Since leaving NYNEX, I have worked for CLECs on engineering and operations matters.
4. In Massachusetts, New Hampshire and Rhode Island, where state commissions have ruled that dark fiber is a unbundled network element ("UNE"), NEVD is in the process of rapidly installing state-of-the-art SONET ring networks that are designed to reach customers in small cities and surrounding suburban areas. To do this, NEVD is purchasing and installing switches, aggressively collocating in a large number of Bell Atlantic central offices, connecting such central offices by leasing Unbundled Dark Fiber and energizing such Unbundled Dark Fiber with NEVD electronics.
5. NEVD anticipates turning up its networks this summer and will offer a full array of voice, Internet and data services to customers in local exchanges that have not seen vigorous, if any, competition.

II. GENERAL DESCRIPTION OF DARK FIBER

6. Dark fiber is fiber optic cable that is customarily used by telecommunications carriers for the purpose of providing telecommunications service. ILECs like BA have deployed it to create a state-of-the-art telecommunications network. A single sheath of fiber optic cable may consist of up to 216 fiber strands, with each strand capable of transporting telecommunications independently of other strands in this same cable sheaths. The fiber optic sheaths and its strands are sometimes referred to in shorthand as "fiber." In order to transport telecommunications, a strand must be energized or "lit" with electronics. As presently installed in BA's network, not all of the strands of

fiber optic cable are lit. Hence, those strands are frequently referred to as “dark.” Accordingly, dark fiber is a fiber optic transmission facility that is used by telecommunications carriers to provide telecommunications service but which currently doesn’t have electronics attached to it.

7. Currently, there is a significant amount of spare dark fiber in BA’s feeder distribution plant (where BA has deployed digital loop carrier) and in its interoffice transport facilities. Such spare capacity exists for a number of reasons. First, ILECs such as BA typically install cable sheaths that are sized to provide excess capacity. This is done because it is time consuming and costly to lay fiber since it involves obtaining permits, performing excavation work, installing conduit and restoring roads. Second, fiber cables historically were sized based on an asynchronous network design. With the advent of SONET networks, however, four-fold increases in transport capacity are being realized.
8. NEVD seeks to use dark fiber in the same ways that ILECs use fiber, that is, for the construction of SONET ring architecture and the configuration of optical fiber and other facilities that will enable NEVD to provide, maintain and monitor service in a given geographic area. This type of system architecture is generally the preferred architecture in the industry today.

A. DARK FIBER TRANSPORT

9. NEVD seeks access to spare dark fiber in BA’s interoffice transport facilities. Unbundling spare dark fiber in ILEC interoffice transport facilities will promote the rapid development of a SONET ring networks.
10. SONET ring architecture enables a carrier, for example, to detect a cut in a cable and redirect service so that the customer does not experience an interruption. Accordingly, it is a matter of substantial importance to CLECs such as NEVD in connection with the quality of service they provide to end users.
11. The availability of Unbundled Dark Fiber transport enables CLECs such as NEVD to install and extend such networks to small cities and surrounding suburban areas that have not yet obtained the benefits of a competitive local exchange market. Without Unbundled Dark Fiber transport, competition is likely to remain limited to densely populated metropolitan areas.

B. DARK FIBER LOOPS

12. NEVD seeks access to spare dark fiber in BA’s feeder distribution system. Unbundling dark fiber in ILEC feeder distribution plants will promote competition, especially for residential customers and customers located in small cities and surrounding suburban areas.
13. Recently, BA has been deploying fiber in the local loop to serve large, multi-tenant buildings. Just like conventional 2-wire and 4-wire analog loops, dark fiber loops are classic bottleneck facilities that will hold end-users hostage to BA unless such dark fiber loops are unbundled. CLECs such as NEVD must have access to dark fiber loops to reach customers economically.

C. DARK FIBER IS NOT PROPRIETARY

14. Dark fiber is not a proprietary network element. It carries with it no proprietary protocols, nor does it contain or involve proprietary information. Further, fiber optic cable is a commodity that can be purchased from a number of manufacturers.

III. THE AVAILABILITY OF UNBUNDLED DARK FIBER PROMOTES RAPID FACILITIES-BASED COMPETITION

15. The availability of Unbundled Dark Fiber is a key factor in determining whether NEVD will enter a particular market and install a network. NEVD is not aggressively entering markets where dark fiber is not readily available.
16. Currently, NEVD has access to dark fiber as a UNE at interim TELRIC prices in the Commonwealth of Massachusetts and the States of New Hampshire and Rhode Island. NEVD is actively using such access to Unbundled Dark Fiber to install SONET architecture that will enable NEVD to serve customers in small cities and surrounding suburban areas. Attached to this Affidavit as Exhibits 1A, 1B, and 1C respectively, please find NEVD's amendments to its interconnection agreements for the Commonwealth of Massachusetts and States of New Hampshire and Rhode Island.
17. The state decisions noted above are enabling NEVD to install SONET ring networks on an economical and rapid basis. To illustrate, in Massachusetts the transport costs to NEVD for using Unbundled Dark Fiber to complete its 15-node, 364 mile SONET ring network will include a nonrecurring charge of \$676.65 and a recurring monthly charge of \$48,348.39. This amounts to an annual recurring charge of \$580,176. This is not a small expenditure for a market entrant, but it is economical compared to so-called alternatives.
18. Access to BA's Unbundled Dark Fiber is providing NEVD with important service quality advantages. This is because, as BA delivers Unbundled Dark Fiber between NEVD's cages, NEVD purchases and installs its own multiplexers to complete the SONET ring. Importantly, this network design provides NEVD with complete control of its network for provisioning, surveillance and repair. It also provides NEVD with a network that is "redundant" and "transparent" to its customers. Redundancy allows for the failure of any single network component without disrupting service to the customer, this happens "transparently" with no loss of signal.
19. Finally, the availability of Unbundled Dark Fiber is allowing NEVD to install and turn-up networks that cover a far more ubiquitous geographic area than if such access were denied.

IV. AT THIS POINT IN TIME, THERE ARE NO REASONABLE SUBSTITUTES FOR UNBUNDLED DARK FIBER

20. Before ILECs such as BA can be required to unbundle network elements, the FCC must consider whether the failure to provide access to network elements would "impair" the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer. The Supreme Court further ruled that the Commission may not conclude that the mere presence of any difference between the use of the network element and the use of a substitute satisfies the "impair" test. NEVD suggests that the Commission should inquire whether any such difference between the

network element and the substitute *materially* reduces a CLEC's ability to provide the services it wants to offer.

21. As will be described more fully below, there are no substitutes for dark fiber loops. It could be argued, theoretically, that there are substitutes for Unbundled Dark Fiber as a transport medium. First, NEVD could purchase interoffice transport from BA at the rates established in its interconnection agreements or in cost proceedings. Second, NEVD could purchase dark fiber directly from a manufacturer and install it as needed. Third, NEVD could lease or otherwise procure the fiber, dark or lit, from a third party vendor. For reasons that will be discussed more fully below, none of these theoretical alternatives are reasonable substitutes for Unbundled Dark Fiber.

A. THERE ARE NO SUBSTITUTES FOR DARK FIBER LOOPS

22. There are no substitutes for Unbundled Dark Fiber loops. Just like conventional 2-wire and 4-wire copper loops, fiber optic loops are bottleneck facilities that tend to hold the end-user hostage to the ILEC until and unless they are unbundled as a UNE. If CLECs are required to build out loops to reach end user customers, there will be no wide spread competition.
23. In contrast, unbundling dark fiber in the feeder distribution system will promote competition, especially for residential customers.
24. If Unbundled Dark Fiber loops were not available to NEVD, the Company's ability to offer state-of-the-art products and services such as Rate Adaptive Digital Subscriber Line ("RADSL") (High Speed Bandwidth to the premise) would be limited to a physical distance of approximately 2 miles ($\pm 12,000$) of non-loaded copper from the central office.
25. However, access to Unbundled Dark Fiber in the feeder/distribution network allows NEVD to extend this service offering to subscribers throughout the exchange by placing NEVD equipment at the end of the fiber lead, thereby maximizing customer coverage while minimizing the length of the copper extension and meeting the 2 mile threshold. Accordingly, making Unbundled Dark Fiber available on a national basis will promote the development of advanced telecommunications services.

B. BELL ATLANTIC LIT TRANSPORT IS NOT A REASONABLE
SUBSTITUTE FOR DARK FIBER

26. If NEVD is required to purchase BA lit transport in place of Unbundled Dark Fiber, it will result in a prohibitive increase in the cost of NEVD's network.
27. As an example, BA's tariffed charges for OC-48 transport in the Commonwealth of Massachusetts include a fixed charge of \$11,531.11 per node and a per mile charge of \$356.83. Attached to this Affidavit as Exhibit 2 is a list of the tariffed rates for UNEs in Massachusetts, including OC-48 transport.

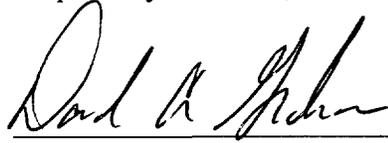
28. *For NEVD to complete its 15-node, 364 mile SONET ring network by leasing BA's OC-48 transport would cost a staggering \$4,792,988 annually. This is approximately eight times more expensive than leasing Unbundled Dark Fiber as transport for its Massachusetts network. A similar magnitude of increased expense would apply with respect to NEVD's networks in New Hampshire and Rhode Island.*
29. An additional limitation of BA's OC-48 transport is that it is offered on a point-to-point basis only. This limitation further increases NEVD's costs and results in a material decrease in NEVD's service quality because it requires the introduction of three multiplexers ("MUXES") at each collocation cage instead of the single MUX that is required if NEVD is allowed to continue to order Unbundled Dark Fiber.
30. It is simply not possible for NEVD to use BA provided lit transport for its SONET ring network in a manner that allows NEVD to provide a level of service that is at parity with BA. This is because establishing ring topography using OC-48 transport from BA would require the provision of a terminating MUX to deliver the incoming link to NEVD and the provision of a second MUX to accept the outgoing link from NEVD for transport to the next node. In this configuration, a NEVD MUX must be placed between the two BA MUXs for interconnection to complete the hand off at each node. *Using NEVD's 15-node ring in Massachusetts as an example, BA would install a total of 30 unnecessary MUXs and introduce 30 additional points of potential failure in NEVD's network that would not exist in a ring built with dark fiber on the same route.* Further, the cost of the additional 30 multiplexers would be borne by NEVD at the rates charged by BA for providing the link in the lit fiber configuration.
31. If Unbundled Dark Fiber were no longer available in Massachusetts, New Hampshire and Rhode Island and NEVD was required to lease lit transport from BA, NEVD's control and management of its interconnect links would be totally dependent upon BA identification, diagnosis and repair of BA's fiber and multiplex equipment to ensure NEVD's point-to-point integrity. NEVD's surveillance operations would be able to manage NEVD's multiplexer equipment, but it would have no management capability for BA's multiplexers or transport.
32. In contrast, with a dark fiber configuration, NEVD can and will establish and maintain total control of its ring architecture and its overall service quality.
33. If NEVD is required to lease BA's OC-48 offering in place of Unbundled Dark Fiber, it will result in a prohibitive increase in NEVD's cost and a material decrease in the service quality that it is able to provide to end user customers.

C. PROCURING FIBER FROM THIRD PARTY VENDORS OR INSTALLING IT THROUGH SELF-PROVISIONING ARE NOT REASONABLE SUBSTITUTES FOR UNBUNDLED DARK FIBER

34. A theoretical alternative to obtaining Unbundled Dark Fiber from ILECs is attempting to procure dark or lit fiber from non-ILEC sources. Such non-ILEC sources for fiber such as Neon, NEES, C2C, or other CLECs do exist in the Northeast but at this point in time, they do not offer a readily available, interchangeable substitute for Unbundled Dark Fiber.

35. As a competitive firm, NEVD has a strong incentive to procure fiber at the lowest cost and the most favorable terms and conditions that are available. Accordingly, NEVD actively sought out third party vendors for fiber prior to undertaking the installation of its networks.
36. A major problem with third party vendors is that they do not offer dark or lit fiber on a ubiquitous basis. NEVD's experience is that at this stage in the market, such vendors do not have fiber available in locations where NEVD needs it. As an example, third party vendors of fiber were only present in 2 of NEVD's 15 collocation locations in Massachusetts. The cost to NEVD of dark fiber from non-ILEC sources in these locations is double the rate of Unbundled Dark Fiber.
37. Accordingly, if NEVD were required to obtain dark fiber from non-ILEC sources, it would have to drastically reduce the scope of its networks.
38. An additional limitation upon third party vendors is that, as with BA's OC-48 offering, the product that third party vendors offer is also point-to-point. Accordingly, the same problems described above with respect to service quality apply.
39. With respect to self-provisioning, NEVD can and does procure and install dark fiber for use in its network. However, the process is time consuming and expensive. Obtaining permits, performing excavation work, and securing necessary access to rights-of-way, pole attachments, and conduit space is a very time consuming process.
40. As an example, it took NEVD six months just to gain access to BA conduit space in order to be able to pull cable 11,000 feet from BA's switch to NEVD's switch in Worcester, Massachusetts.
41. Based on actual quotes for make-ready work from BA and from estimates from third party contractors, NEVD's cost to install its own fiber in BA conduit is approximately \$46,680 per mile. Accordingly, if NEVD were required to install its own fiber in BA conduit to complete its SONET ring network in the state of Massachusetts, it would cost NEVD approximately \$17 million.
42. Although the networks NEVD intends to install in New Hampshire and Rhode Island are somewhat smaller than in Massachusetts, the conclusion is essentially the same. It would be cost prohibitive for NEVD to self-provision interoffice transport in connection with its networks.
43. As stated in paragraphs 4 and 5 of this Affidavit, NEVD anticipates turning up its SONET ring networks in Massachusetts, New Hampshire and Rhode Island later this summer. If Unbundled Dark Fiber were not available in these states and NEVD was required to install its own fiber as interoffice transport, NEVD's plans to provide service would not only be substantially delayed, its plans would be substantially downsized.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "David A. Graham". The signature is written in black ink and is positioned above a horizontal line.

David A. Graham

